

Neurochemicals

Newsletter 5/2011 - New Products for Neuroscience Research

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- BG0601 Curcumin - Antitumour agent, inhibits β -amyloid formation
- BG0602 Irinotecan hydrochloride - DNA topoisomerase I inhibitor, antitumour agent
- BG0603 SN 38 - Antitumour agent, active metabolite of Irinotecan (Cat. No. BG0602)
- BG0605 Nalmefene hydrochloride - A nonselective opioid receptor antagonist

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- BG0606 Retinal - Retinoid, precursor of retinoic acid
- BG0607 Deoxycorticosterone acetate - Aldosterone precursor molecule
- BG0608 Dapoxetine hydrochloride - Potent, selective 5-HT uptake inhibitor
- BG0609 Flurbiprofen - Potent, non-selective cyclooxygenase inhibitor

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- BG0610 (R)-Flurbiprofen - Potent, non-selective cyclooxygenase inhibitor, active enantiomer
- BG0611 Digoxigenin - Na^+, K^+ -ATPase inhibitor, aglycon of digoxin
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- BN0814 DU-14 - Steroid sulfatase inhibitor
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- BN0816 2-Hexyl-4-pentynoic acid - Potent HDAC inducer, neuroprotective agent
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- BN0823 Dimethyl fumarate - Anti-inflammatory and neuroprotective agent
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- BP0412 MOG (37-46) (mouse, rat) - MOG fragment, induces encephalomyelitis
- BP0413 Pepstatin A - Pepsin, renin and cathepsin D protease inhibitor
- BP0414 Neuropeptide S (rat) - Neuropeptide S, regulates sleep and stress
- BP0415 Neuropeptide S (mouse) - Neuropeptide S, regulates sleep and stress

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- BP0416 PLP (139-151) (human, mouse, rat) - Proteolipid Protein, induces encephalomyelitis
- BP0417 LQEQ-19 (human) - Pro-VGF-derived peptide VGF (599-617)
- BP0418 AQEE-30 (mouse, rat) - Pro-VGF-derived peptide VGF (588-617)
- BS0287 SB 265610 - Potent chemokine CXCR₂ antagonist

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- BS0288 Anomalin A - Potent p56^{lck} tyrosine kinase inhibitor
- BS0289 Myricetin - Flavonoid, antitumour and antioxidant agent
- BS0290 BAY 41-8543 - Potent, selective sGC activator
- BS0291 Betulinic acid - Natural triterpenoid with antitumour activity

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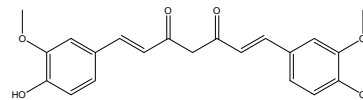
- BS0292 SU-1498 - VEGF receptor tyrosine kinase inhibitor
- BS0293 Zerumbone - Potentiates TRAIL-induced apoptosis
- BS0294 7,8-Dihydroxyflavone - Tyrosine kinase receptor B (TrkB) agonist
- BS0295 Narciclasine - A Rho/Rho kinase/LIM kinase/cofilin activator

Curcumin

Cat. No.	Size	Price
BG0601	100 mg	69 €

(*E,E*)-1,7-Bis(4-Hydroxy-3-methoxyphenyl)-1,6-heptadiene-3,5-dione; Diferuloylmethane; Diferulylmethane
M.W. 368.38 C₂₁H₂₀O₆ [458-37-7] Store at +4° C
Soluble to 11 mg/ml in DMSO or to 10 mg/ml in ethanol

Potent antitumour agent with antiinflammatory and antioxidant properties. Induces apoptosis in cancer cells and inhibits phorbol ester-induced protein kinase C (PKC) activity. Potent inhibitor of EGFR tyrosine kinase and IκB kinase. Inhibits inducible nitric oxide synthase (iNOS), cyclooxygenase and lipoxygenase. It inhibits formation of amyloid β oligomers and fibrils, binds plaques and reduces amyloid *in vivo*.



Reference

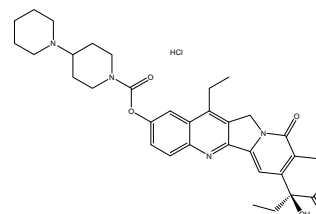
1. Jaruga et al. (1998) FEBS Lett 433:287; 2. Khar et al. (1999) FEBS Lett 445:165; 3. Yang et al. (2005) J Biol Chem 280:5892

Irinotecan hydrochloride

Cat. No.	Size	Price
BG0602	25 mg	185 €

(4*S*)-4,11-Diethyl-3,4,12,14-tetrahydro-4-hydroxy-3,14-dioxo-1*H*-pyrano[3',4':6,7]indolizino[1,2-*b*]quinolin-9-yl [1,4'-bipiperidine]-1'-carboxylic acid ester hydrochloride; Camptosar; CPT 11; Camptothecin 11
M.W. 623.14 C₃₃H₃₈N₄O₆ .HCl [100286-90-6] Store at +4° C
Soluble in 100 mM in DMSO or to 25 mM in water

Antitumour agent. DNA topoisomerase I inhibitor that displays antitumour activity against a range of tumour types. See also the active metabolite SN 38 (Cat. No. BG0603), Camptothecin (Cat. No. BG0120) and Topotecan (BG0599).



Reference

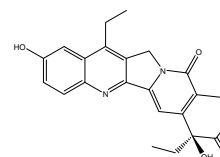
1. Kawato et al. (1993) J Pharm Pharmacol 45:444; 2. Vassal et al. (1996) Br J Cancer 74:537; 3. Morton et al. (2005) Can Chemother Pharmacol 56:629; 4. Ando and Hasegawa (2005) Drug Metab Rev 37:565

SN 38

Cat. No.	Size	Price
BG0603	10 mg	75 €

(4*S*)-4,11-Diethyl-4,9-dihydroxy-1*H*-pyrano[3',4':6,7]indolizino[1,2-*b*]quinoline-3,14(4*H*,12*H*)dione; 7-Ethyl-10-hydroxycamptothecin
M.W. 392.40 C₂₂H₂₀N₂O₅ [86639-52-3] Store at +4° C
Soluble to 100 mM in DMSO or ethanol

Antitumour agent and active metabolite of Irinotecan (Cat. No. BG0602). DNA topoisomerase I inhibitor that displays antitumour activity against a range of tumour types. See also Camptothecin (Cat. No. BG0120) and Topotecan (BG0599).



Reference

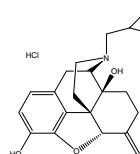
1. Kawato et al. (1991) Cancer Res 51:4187; 2. Gao et al. (2005) Bioorg Med Chem Lett 15:3233; 3. Ramesh et al. (2010) Biomed Chromatogr 24:104

Nalmefene hydrochloride

Cat. No.	Size	Price
BG0605	5 mg	120 €

(5*α*)-17-(Cyclopropylmethyl)-4,5-epoxy-6-methylenemorphinan-3,14-diol hydrochloride; Revex
M.W. 375.89 C₂₁H₂₅NO₃ .HCl [58895-64-0] Store at RT
Soluble to 100 mM in water

A nonselective opioid receptor antagonist. It is used in the management of alcohol dependence and is under investigation for the treatment of other addictions. See also Nalaxone (Cat. No. BN0364) and Naltrexone (Cat. No. BN0365).



Reference

1. Osborn et al. (2010) Life Sci 86:624; 2. Rösner et al. (2010) Cochrane Database Syst Rev 12:CD001867; 3. Grant et al. (2010) Br J Psychiatry 197:330

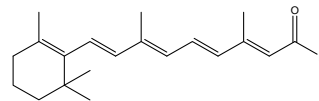
Retinal

Cat. No.	Size	Price
BG0606	100 mg	65 €

all-trans-(2E,4E,6E,8E)-3,7-Dimethyl-9-(2,6,6-trimethylcyclohexen-1-yl)nona-2,4,6,8-tetraenal; *all-trans*-Retinal; Vitamin A aldehyde; Retinaldehyde

M.W. 284.44 C₂₀H₂₈O [116-31-4] Store at -20°C (protect from light)
Soluble in DMSO

Retinoid. It is converted to retinoic acid (Cat. No. BG0072) *in vivo* by the action of retinal dehydrogenase. Retinoic acid is a ligand for both the retinoic acid receptor (RAR) and the retinoid X receptor (RXR). See also Retinol (Cat. No. BG0050).



Reference

1. Desvergne (2007) *Nat Med* 13:671

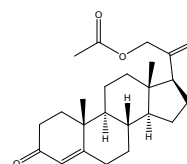
Deoxycorticosterone acetate

Cat. No.	Size	Price
BG0607	1 g	175 €

21-Hydroxy-4-pregnene-3,20-dione 21-acetate; 11-Deoxycorticosterone acetate; 21-Acetoxy-4-pregnene-3,20-dione; 21-Acetoxyprogesterone; 21-Hydroxyprogesterone 21-acetate; DOCA

M.W. 372.50 C₂₃H₃₂O₄ [56-47-3] Store at RT
Soluble to 100 mM in DMSO or ethanol

A precursor molecule of aldosterone. It is produced from progesterone by 21β-hydroxylase and is converted to corticosterone by 11β-hydroxylase. Corticosterone is then converted to aldosterone by aldosterone synthase.



Reference

1. Zicha et al. (1989) *AJP Regu Physiol* 256:R138; 2. Fink et al. (2000) *Hypertension* 35:464

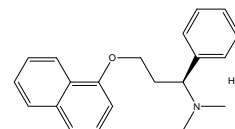
Dapoxetine hydrochloride

Cat. No.	Size	Price
BG0608	10 mg	69 €

(S)-N,N-Dimethyl-1-phenyl-3-(1-naphthalenyloxy)propanamine hydrochloride; LY 210448; Priligy

M.W. 341.87 C₂₁H₂₃NO .HCl [129938-20-1] Store at RT
Soluble in DMSO or ethanol

Potent and selective short-acting selective serotonin reuptake inhibitor (SSRI). It is marketed for the treatment of premature ejaculation in men.



Reference

1. Patel et al. (2009) *Curr Opin Investig Drugs* 10:681

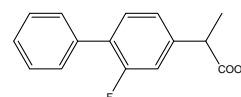
Flurbiprofen

Cat. No.	Size	Price
BG0609	100 mg	55 €

(RS)-2-(2-Fluoro-4-biphenyl)propionic acid; Urbifen; Ansaid; Froben

M.W. 244.26 C₁₅H₁₃FO₂ [5104-49-4] Store at RT
Soluble to 50 mM in ethanol and to 100 mM in DMSO

Potent cyclooxygenase inhibitor (IC₅₀ values are 0.1 and 0.4 μM, human COX-1 and COX-2 respectively). Displays analgesic, antiinflammatory, antipyretic and antitumour activity. See also the active enantiomer (R)-Flurbiprofen (Cat. No. BG0610).



Reference

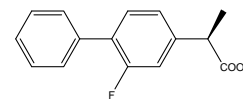
1. Glenn et al (1973) *Agents Actions* 3:210; 2. Gierse et al. (1995) *Biochem J* 305:479; 3. King and Khalili (2001) *Oncogene* 20:6864

(R)-Flurbiprofen

Cat. No.	Size	Price
BG0610	10 mg	55 €

(R)-(-)-2-Fluoro- α -methyl-4-biphenylacetic acid; E-7869; Tarenflurbil; Flurizan
M.W. 244.26 C₁₅H₁₃FO₂ [51543-40-9] Store at RT
Soluble to 50 mM in ethanol and to 100 mM in DMSO

Potent cyclooxygenase inhibitor. Displays analgesic, antiinflammatory, antipyretic and antitumour activity. See also Flurbiprofen (Cat. No. BG0609). It inhibits the enzyme γ -secretase thereby preventing the formation of the amyloid- β peptide. It is currently in clinical trials for treatment of metastatic prostate cancer.



Reference

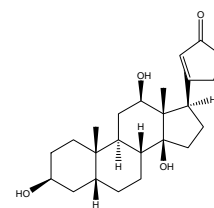
1. Glenn et al (1973) Agents Actions 3:210; 2. Gierse et al. (1995) Biochem J 305:479; 3. King and Khalili (2001) Oncogene 20:6864; 4. Geerts (2007) IDrugs 10:121; 5. Kukar et al. (2008) Nature 453:925

Digoxigenin

Cat. No.	Size	Price
BG0611	100 mg	119 €

3 β , 12 β , 14 β , 21-Tetrahydroxy-20(22)-norcholenic acid lactone; 3 β , 12 β , 14-Trihydroxy-5 β , 20(22)-cardenolide; Lanadigigenin
M.W. 390.51 C₂₃H₃₄O₅ [1672-46-4] Store at RT
Soluble in DMSO or ethanol

A cardenolide which is the aglycon of Digoxin (Cat. No. BG0168). Digoxin is a cardiac glycoside, that binds to a site on the extracellular aspect of the α -subunit of the Na⁺/K⁺ ATPase pump in the membranes of heart cells (myocytes).



Reference

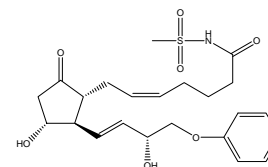
1. Takara et al. (2003) Biochem Biophys Res Commun 306:116

Sulprostone

Cat. No.	Size	Price
BG0612	1 mg	114 €

N-(Methylsulfonyl)-9-oxo-11 α , 15R-dihydroxy-16-phenoxy-17, 18, 19, 20-tetranorprosta-5Z, 13E-dien-1-amide; Nalador
M.W. 465.56 C₂₃H₃₇NO₇S [60325-46-4] Store at -20° C
Soluble in DMSO or ethanol

A selective EP₃ receptor agonist (K_i value of 0.35 nM at the human recombinant EP3-III receptor and an IC₅₀ of 0.01 μ M for the inhibition of PGE₂ binding). A metabolism resistant synthetic analogue of PGE₂.



Reference

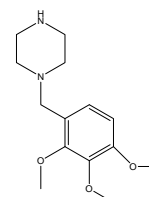
1. Topozada et al. (1979) Prostaglandins 17:461; 2. Smith et al. (1994) J Pharmacol Exp Ther 271:390; 3. Narumiya et al. (1999) Phys Rev 79:1193

Trimetazidine

Cat. No.	Size	Price
BG0613	50 mg	75 €

1-(2,3,4-Trimethoxybenzyl)piperazine; Vastarel
M.W. 266.34 C₁₄H₂₂N₂O₃ [5011-34-7] Store at RT
Soluble in DMSO or ethanol

An anti-ischemic and anti-anginal metabolic agent, which improves myocardial glucose utilization through inhibition of fatty acid metabolism. It is effective in the treatment of stable angina.



Reference

1. Sellier et al. (2003) Am J Cardiovasc Drugs 3:361; 2. Tepliakov et al. (2004) Klin Med 82: 57

DU-14

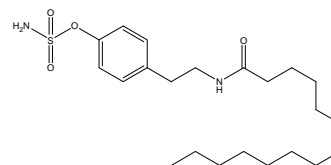
Cat. No.	Size	Price
BN0814	10 mg	150 €

(*p*-O-Sulfamoyl)-*N*-tetradecanoyl tyramine

M.W. 426.61 C₂₂H₃₈N₂O₄S [186303-55-9] Store at +4° C

Soluble to 25 mg/ml in DMSO or ethanol

Steroid sulfatase inhibitor (IC₅₀ = 350 nM; inhibition of MDA-MB-231 estrone sulfatase activity). It inhibits proliferation of human MCF-7 breast cancer cells. Furthermore, it enhances learning and spatial memory in rats. Steroid sulfatase is involved in the metabolism of steroids, e.g. it catalyzes the conversion of sulfated steroid precursors to estrogens during pregnancy.



Reference

1. Selcer et al. (1997) *Cancer Res* 57:702; 2. Johnson et al. (2000) *Brain Res* 865:286

BQCA

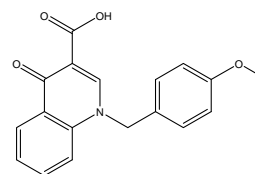
Cat. No.	Size	Price
BN0815	10 mg	109 €

1-(4-Methoxybenzyl)-4-oxo-1,4-dihydroquinoline-3-carboxylic acid

M.W. 309.32 C₁₈H₁₅NO₄ Store at RT

Soluble to 10 mg/ml in DMSO or ethanol

Highly selective allosteric potentiator of the M₁ muscarinic acetylcholine receptor (mAChR). It reduces the concentration of ACh required to activate M₁ up to 129-fold with an inflection point value of 845 nM. No potentiation, agonism, or antagonism activity on other mAChRs is observed up to 100 µM. BQCA reverses scopolamine-induced memory deficits and increases blood flow to the cerebral cortex in mouse models. M₁ activators slow the progression of Alzheimers disease (AD).



Reference

1. Fisher (2008) *Neurotherapeutics* 5:433; 2. Ma et al. (2009) *Proc Natl Acad Sci USA* 106:15950

2-Hexyl-4-pentynoic acid

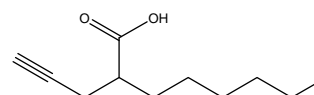
Cat. No.	Size	Price
BN0816	50 mg	145 €

2-(Prop-2-ynyl)octanoic acid

M.W. 182.26 C₁₁H₁₈O₂ [96017-59-3] Store at RT

Soluble in DMSO or ethanol

Potent and robust histone hyperacetylation (HDAC) inducer, protecting against glutamate excitotoxicity. The histone acetylation elicited is significant at 5 µM and reaches a maximal increase of 600-700% at 50-100 µM. The neuroprotective effects is evident at 10-25 µM and reaches a complete protection at 50-100 µM. See also Valproic acid (Cat. No. BG0351).



Reference

1. Leng et al. (2010) *Neurosci Lett* 476:127

Caprospinol

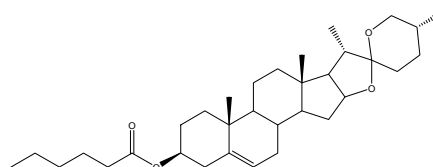
Cat. No.	Size	Price
BN0817	10 mg	185 €

(22*R*,25*R*)-20α-Spirost-5-en-3β-yl hexanoate; SP 233

M.W. 512.76 C₃₃H₅₂O₄ [4592-56-1] Store at +4° C

Soluble in DMSO or ethanol

It reduces amyloid deposits and improves cognitive function in a rat model of Alzheimer's disease (AD). It blocks its oligomerization into the highly neurotoxic species Amyloid Derived Diffusile Ligands (ADDLs). Its neuroprotective properties could also be the result of a direct pharmacological effect on mitochondria.



Reference

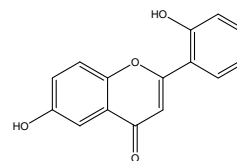
1. Lecanu et al. (2009) *Exp Opin Invest Drugs* 18:265; 2. Lecanu et al. (2010) *Neuroscience* 165:427

6,2'-Dihydroxyflavone

Cat. No.	Size	Price
BN0818	10 mg	110 €

6-Hydroxy-2-(2-hydroxyphenyl)-4H-1-benzopyran-4-one; DHF
M.W. 254.24 C₁₅H₁₀O₄ [92439-20-8] Store at RT
Soluble to 10 mg/ml in DMSO or ethanol

A subtype-selective partial inverse agonist of GABA_A receptor benzodiazepine site.



Reference

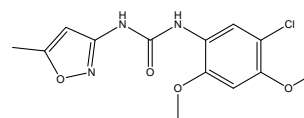
1. Wang et al. (2007) *Neuropharmacology* 53:574

PNU-120596

Cat. No.	Size	Price
BN0819	5 mg	95 €

N-(5-Chloro-2,4-dimethoxyphenyl)-N'-(5-methyl-3-isoxazolyl)-urea; NSC 216666; PNU 120596
M.W. 311.72 C₁₃H₁₄ClN₃O₄ [501925-31-1] Store at +4° C
Soluble to 10 mg/ml in DMSO or ethanol

A positive allosteric modulator (PAM) at $\alpha 7$ nicotinic acetylcholine receptors. It produces no detectable change in currents mediated by $\alpha 4\beta 2$, $\alpha 3\beta 4$, $\alpha 9\alpha 10$ nAChRs. It increases channel mean open time, but has no effect on ion selectivity. It causes conformational changes in the extracellular ligand binding domain similar to those caused by acetylcholine.



Reference

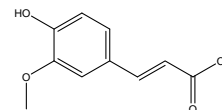
1. Barron et al. (2009) *Mol Pharmacol* 76:253; 2. Kalappa et al. (2010) *PLoS One* 5:e13964; 3. Gusev and Uteshev (2010) *J Pharmacol Exp Ther* 332:588

Ferulic acid

Cat. No.	Size	Price
BN0820	500 mg	45 €

trans-4-Hydroxy-3-methoxycinnamic acid; (E)-4'-Hydroxy-3'-methoxycinnamic acid
M.W. 194.18 C₁₀H₁₀O₄ [537-98-4] Store at RT
Soluble in DMSO or ethanol

A potent antioxidant *in vitro*, due to its ability to scavenge free radicals and induce a robust cell stress response through the up-regulation of cytoprotective enzymes such as heme oxygenase-1, heat shock protein 70, extracellular signal-regulated kinase 1/2 and Akt.



Reference

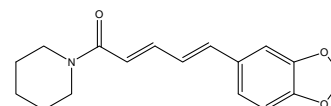
1. Graf (1992) *Free Radic Biol Med* 13:423; 2. Mathew and Abraham (2004) *Crit Rev Biotechnol* 24:59

Piperine

Cat. No.	Size	Price
BN0821	500 mg	65 €

(2E,4E)-5-(Benzo[d][1,3]dioxol-5-yl)-1-(piperidin-1-yl)pent-2,4-dien-1-one; 1-Piperoylpiperidine
M.W. 285.34 C₁₇H₁₉NO₃ [94-62-2] Store at RT
Soluble in DMSO or ethanol, slightly soluble in water

A vanilloid VR1 receptor agonist. An alkaloid, that is responsible for the pungency of black pepper and long pepper. It has also been used in some forms of traditional medicine and as an insecticide.



Reference

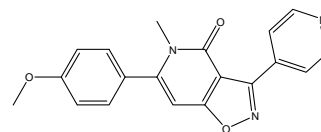
1. Epstein et al. (1993) *J Chem Ed* 70:598

MMPIP

Cat. No.	Size	Price
BN0822	10 mg	125 €

6-(4-Methoxyphenyl)-5-methyl-3-(4-pyridinyl)isoxazolo[4,5-c]pyridin-4(5H)-one
M.W. 333.34 C₁₉H₁₅N₃O₃ [479077-02-6] Desiccate at RT
Soluble to 10mM in DMSO

Potent and selective allosteric mGlu₇ receptor antagonist. It inhibits agonist-induced intracellular calcium mobilisation and cAMP accumulation (IC₅₀ values are 26 and 610 nM). Also displays intrinsic activity; increasing forskolin-induced cAMP accumulation in the absence of an agonist. Exhibits no significant activity at mGluR1, mGluR2, mGluR3, mGluR4, mGluR5, and mGluR8.



Reference

1. Suzuki et al. (2007) *J Pharmacol Exp Ther* 323:147; 2. Li et al. (2009) *Neuropsychopharmacology* 34:1783; 3. Niswender et al. (2010) *Mol Pharmacol* 77:459; 4. Li et al. (2010) *J Neurochem* 114:1368

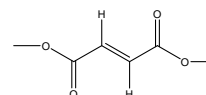
Dimethyl fumarate

Cat. No.	Size	Price
BN0823	100 mg	55 €

DMF

M.W. 144.13 C₆H₈O₄ [624-49-7] Store at RT
Soluble in DMSO or ethanol

A promising emerging treatment for relapsing-remitting MS, combining anti-inflammatory and possibly clinically relevant neuroprotective effects with the convenience of oral administration. It displays beneficial effects in R6/2 and YAC128 models of Huntington's disease (HD). It had first been included in the treatment for psoriasis.



Reference

1. Papadopoulou et al. (2010) *Expert Opin Invest Drugs* 19:1603; 2. Ellrichmann et al. (2011) *PLoS One* 6:e16172; 3. Linker et al. (2011) *Brain* 134:678

D-Ala-Lys(AMCA)

Cat. No.	Size	Price
BP0410	5 mg	115 €

D-Ala-(L)-Lys-N-7-amino-4-methylcoumarin-3-acetic acid
M.W. 432.50 C₂₁H₂₈N₄O₆ Desiccate at -20° C
Soluble to 1 mg/ml in water

Fluorescent dipeptide derivative, which could be used as an excellent reporter molecule for studying the oligopeptide transport system in brain cell cultures. See also β-Ala-Lys(AMCA) (Cat. No. BP0352).

D-Ala-Lys(AMCA)

Reference

1. Dieck et al. (1999) *Glia* 25:10; 2. Groneberg et al. (2001) *Am J Physiol Gastrointest Liver Physiol* 281:G697

MOG (37-50) (mouse, rat)

Cat. No.	Size	Price
BP0411	1 mg	183 €

Myelin oligodendrocyte glycoprotein (37-50) (mouse, rat)
M.W. 1702.95 C₈₇H₁₁₉N₂₃O₁₈ Desiccate at -20° C
Soluble to 1 mg/ml in 10% Acetonitrile in water

Myelin oligodendrocyte glycoprotein (MOG) fragment that induces severe chronic experimental autoimmune encephalomyelitis in transgenic mice. MOG is found exclusively in the CNS, where it is localized on the surface of myelin and oligodendrocyte cytoplasmic membranes. It has been implicated as an important autoantigen in multiple sclerosis (MS). See also MOG (35-55) and MOG (37-46) (Cat. Nos. BP0328 and BP0412, respectively).

H-Val-Gly-Trp-Tyr-Arg-Ser-Pro-Phe-Ser-Arg-Val-Val-His-Leu-OH

Reference

1. Encinas et al. (1999) *Nature Gen* 21:158; 2. Hisahara (2000) *EMBO J* 19:341; 3. Ford and Evavold (2003) *Immunology* 171:1247; 4. Ford and Evavold (2006) *Cell Immunol* 240:53; 5. Frausto et al. (2007) *J Neuroimmunol* 192:124

MOG (37-46) (mouse, rat)

Cat. No.	Size	Price
BP0412	1 mg	183 €

Myelin oligodendrocyte glycoprotein (37-46) (mouse, rat)

M.W. 1254.40 C₅₉H₈₃N₁₇O₁₄ Desiccate at -20° C

Soluble to 1 mg/ml in 10% Acetonitrile in water

Myelin oligodendrocyte glycoprotein (MOG) fragment that induces severe chronic experimental autoimmune encephalomyelitis in transgenic mice. MOG is found exclusively in the CNS, where it is localized on the surface of myelin and oligodendrocyte cytoplasmic membranes. It has been implicated as an important autoantigen in multiple sclerosis (MS). See also MOG (35-55) and MOG (37-50) (Cat. Nos. BP0328 and BP0411, respectively).

H-Val-Gly-Trp-Tyr-Arg-Ser-Pro-Phe-Ser-Arg-OH

Reference

1. Encinas et al. (1999) *Nature Gen* 21:158; 2. Hisahara (2000) *EMBO J* 19:341; 3. Ford and Evavold (2003) *Immunology* 171:1247; 4. Ford and Evavold (2005) *Eur J Immunol* 35:76; 5. Frausto et al. (2007) *J Neuroimmunol* 192:124

Pepstatin A

Cat. No.	Size	Price
BP0413	25 mg	95 €

M.W. 685.90 C₃₄H₆₃N₅O₉ [26305-03-3] Desiccate at -20° C

Soluble in water

A low molecular weight inhibitor of acid proteases, e.g. pepsin, renin and cathepsin D.

Isovaleryl-Val-Val-Sta-Ala-Sta-OH

Reference

1. Umezawa et al. (1970) *J Antibiot* 23:259; 2. Umezawa (1977) *Acta Biol Med Germ* 36:1899; 3. Workman and Burkitt (1979) *Arch Biochem Biophys* 194:157

Neuropeptide S (rat)

Cat. No.	Size	Price
BP0414	1 mg	245 €

NPS (rat)

M.W. 2210.50 C₉₅H₁₆₀N₃₄O₂₇ [412938-75-1] Desiccate at -20° C

Soluble in water

Neuropeptide that plays a major role in regulating sleep and stress. Novel modulator of arousal and anxiety. It enhances memory during the consolidation phase and interacts with noradrenergic systems in the brain.

H-Ser-Phe-Arg-Asn-Gly-Val-Gly-Ser-Gly-Val-Lys-Lys-Thr-Ser-Phe-Arg-Arg-Ala-Lys-Gln-OH

Reference

1. Xu et al. (2004) *Neuron* 43:487; 2. Reinscheid and Xu (2005) *Neuroscientist* 11:532; 3. Reinscheid and Xu (2005) *FEBS J* 272:5689; 4. Xu et al. (2007) *J Comp Neurol* 500:84; 5. Rizzi et al. (2008) *Br J Pharmacol* 154:471; 6. Okamura et al. (2011) *Neuropsychopharmacology* 36:744

Neuropeptide S (mouse)

Cat. No.	Size	Price
BP0415	1 mg	245 €

NPS (mouse)

M.W. 2182.45 C₉₃H₁₅₆N₃₄O₂₇ Desiccate at -20° C

Soluble in water

Neuropeptide that plays a major role in regulating sleep and stress. Novel modulator of arousal and anxiety. It enhances memory during the consolidation phase and interacts with noradrenergic systems in the brain.

H-Ser-Phe-Arg-Asn-Gly-Val-Gly-Ser-Gly-Ala-Lys-Lys-Thr-Ser-Phe-Arg-Arg-Ala-Lys-Gln-OH

Reference

1. Xu et al. (2004) *Neuron* 43:487; 2. Reinscheid and Xu (2005) *Neuroscientist* 11:532; 3. Reinscheid and Xu (2005) *FEBS J* 272:5689; 4. Xu et al. (2007) *J Comp Neurol* 500:84; 5. Rizzi et al. (2008) *Br J Pharmacol* 154:471; 6. Okamura et al. (2011) *Neuropsychopharmacology* 36:744

PLP (139-151) (human, mouse, rat)

Cat. No.	Size	Price
BP0416	1 mg	90 €

Myelin Proteolipid Protein (139-151) (human, mouse, rat)
M.W. 1537.79 C₇₂H₁₀₄N₂₀O₁₆S Desiccate at -20° C
Soluble to 1 mg/ml in water

This proteolipid protein PLP (139-151) causes severe, acute experimental allergic encephalomyelitis in SJL mice. See also [Ser¹⁴⁰]-PLP (139-151) (Cat. No. BP0321).

H-His-Cys-Leu-Gly-Lys-Trp-Leu-
Gly-His-Pro-Asp-Lys-Phe-OH

Reference

1. Gonzalez-Rey et al. (2006) *Am J Pathol* 168:1179; 2. Toscano et al. (2010) *Mol Ther* 18:1035; 3. Wu et al. (2010) *J Neuroimmunol* 223:65; 4. Zierath et al. (2010) *Neurocrit Care* 12:274

LQEQ-19 (human)

Cat. No.	Size	Price
BP0417	500 µg	400 €

VEGF (599-617)
M.W. 2408.66 C₁₀₆H₁₇₀N₃₀O₃₄ Desiccate at -20° C
Soluble in water

A Pro-VEGF-derived peptide VEGF (599-617). It induces penile erection, when injected into the paraventricular nucleus of male rats. The effect is mediated by increased nitric oxide production in the hypothalamic nucleus causing activation of paraventricular oxytocinergic neurons. It evokes thermal hyperalgesia, when injected intrathecally into naive adult mice.

H-Leu-Gln-Glu-Gln-Glu-Glu-Leu-Glu-Asn-Tyr-
Ile-Glu-His-Val-Leu-Leu-Arg-Arg-Pro-OH

Reference

1. Succu et al. (2004) *Eur J Neurosci* 20:3035; 2. Succu et al. (2005) *Neuropharmacology* 49:1017; 3. Riedl et al. (2009) *J Neurosci* 29:13377

AQEE-30 (mouse, rat)

Cat. No.	Size	Price
BP0418	500 µg	500 €

VEGF (588-617)
M.W. 3674.9 C₁₅₆H₂₄₅N₄₇O₅₆ [323185-80-4] Desiccate at -20° C
Soluble in water

A Pro-VEGF-derived peptide VEGF (588-617). It increases synaptic charge in hippocampal neurons, induces penile erection, when injected into the paraventricular nucleus of male rats and evokes thermal hyperalgesia, when injected intrathecally into naive adult mice.

H-Ala-Gln-Glu-Glu-Ala-Asp-Ala-Glu-Glu-Arg-
Arg-Leu-Gln-Glu-Gln-Glu-Glu-Leu-Glu-Asn-
Tyr-Ile-Glu-His-Val-Leu-Leu-His-Arg-Pro-OH

Reference

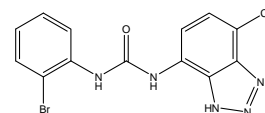
1. Alder et al. (2003) *J Neurosci* 23:10800; 2. Succu et al. (2004) *Eur J Neurosci* 20:3035; 3. Succu et al. (2005) *Neuropharmacology* 49:1017; 4. Riedl et al. (2009) *J Neurosci* 29:13377

SB 265610

Cat. No.	Size	Price
BS0287	5 mg	135 €

1-(2-Bromophenyl)-3-(4-cyano-1H-benzo[d][1,2,3]triazol-7-yl)urea
M.W. 357.16 C₁₄H₉BrN₆O [211096-49-0] Store at +4° C
Soluble in DMSO or ethanol

Potent chemokine CXCR₂ receptor antagonist. It prevents neutrophil accumulation in hyperoxia-exposed newborn rats.



Reference

1. Auten et al. (2001) *J Pharmacol Exp Ther* 299:90; 2. Bhandari and Elias (2006) *Free Rad Biol Med* 41:4

Anomalin A

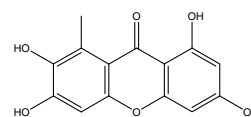
Cat. No.	Size	Price
BS0288	1 mg	128 €

2,3,6,8-Tetrahydroxy-1-methyl-9H-xanthen-9-one

M.W. 274.23 C₁₄H₁₀O₆ [548740-86-9] Store at +4° C (protect from light)

Soluble in DMSO or ethanol

Potent p56^{lck} tyrosine kinase inhibitor. p56^{lck} is a cytoplasmic tyrosine kinase of the Src family expressed in T cells and natural killer (NK) cells. Antioxidant agent, that is originally isolated from the marine fungus *Arthrimum sp.*



Reference

1. Abdel-Lateff et al. (2003) *J Nat Prod* 66:706

Myricetin

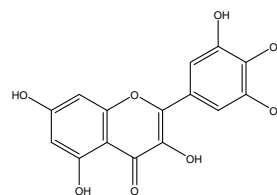
Cat. No.	Size	Price
BS0289	10 mg	55 €

3,5,7-Trihydroxy-2-(3,4,5-trihydroxyphenyl)-4H-1-benzopyran-4-one; NSC 407290; Cannabiscetin; Myricetol

M.W. 318.24 C₁₅H₁₀O₈ [529-44-2] Store at RT

Soluble in DMSO or ethanol

A naturally occurring flavonoid that acts as a powerful antioxidant. It inhibits Cu²⁺-mediated LDL oxidation and treatment of U937-derived macrophages with myricetin (20 μM) significantly inhibited CD36 cell surface protein and mRNA expression (p<0.01). Also an inhibitor of neoplastic cell transformation and MEK1. It is found in many fruits and vegetables, including red wine.



Reference

1. Lee et al. (2007) *Carcinogenesis* 28:1918; 2. Lian et al. (2008) *Biochim Biophys Acta* 1781:601; 3. Kumamoto et al. (2009) *Cancer Lett* 275:17

BAY 41-8543

Cat. No.	Size	Price
BS0290	10 mg	250 €

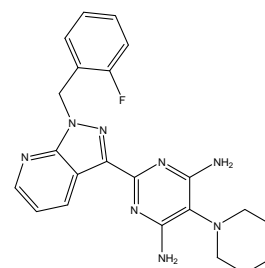
2-[1-[(2-Fluorophenyl)methyl]-1H-pyrazolo[3,4-b]pyridin-3-yl]-5-(4-morpholinyl)-4,6-pyrimidinediamine

M.W. 420.44 C₂₁H₂₁FN₅O [256498-66-5] Store at +4° C

Soluble to 3 mg/ml in DMSO or DMF, soluble to 1.3 mg/l in water

A potent, selective NO-independent soluble guanylate cyclase (sGC) activator, that increases the activity of sGC dose-dependently (from 0.1 nM to 100 μM) up to 92-fold. BAY 41-8543 relaxes vessels and inhibits platelet aggregation *in vitro* at nM concentrations. *In vivo*, it decreases blood pressure dose-dependently, prolongs bleeding time and reduces thrombosis. It increases pulmonary vasodilation without changing mean arterial pressure, suggesting that sGC agonists may be useful in treating Pulmonary Arterial Hypertension (PAH).

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Reference

1. Stasch et al. (2002) *Br J Pharmacol* 135:333; 2. Stasch et al. (2002) *Br J Pharmacol* 135:344; 3. Evgenov et al. (2007) *Am J Respir Crit Care Med* 176:1138; 4. Ghofrani and Grimminger (2009) *Eur Respir Rev* 111:35

Betulinic acid

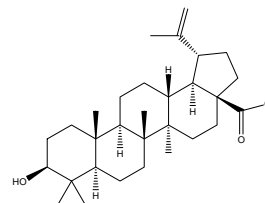
Cat. No.	Size	Price
BS0291	10 mg	58 €

3β-Hydroxy-20(29)-lupaene-28-oic acid

M.W. 456.70 C₃₀H₄₈O₃ [472-15-1] Desiccate at +4° C

Soluble to 25 mg/ml in DMSO or to 25 mg/ml in ethanol

Natural triterpenoid that displays antitumour activity. Furthermore, it exhibits TGR5 agonist activity (EC₅₀ = 1.04 μM). TGR5 is a G protein-coupled receptor, known to be activated by bile acids and which mediates some important cell functions. Betulinic acid is found in the bark of several species of plants, principally the white birch *Betula pubescens*.



Reference

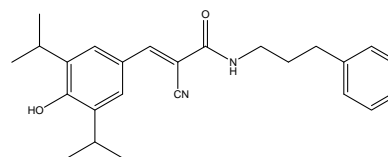
1. Kashiwada et al. (1996) *J Med Chem* 39:1016; 2. Fulda (2008) *Int J Mol Sci* 9:1096; 3. Genet et al. (2010) *Med Chem* 53:178

SU-1498

Cat. No.	Size	Price
BS0292	10 mg	150 €

(E)-N-(3-Phenylpropyl)-alpha-cyano-3',5'-diisopropyl-4'-hydroxycinnamide; SU 1498; Tyrphostin SU 1498
M.W. 390.52 C₂₅H₃₀N₂O₂ Desiccate at -20° C
Soluble to 25 mg/ml in DMSO or ethanol

VEGF receptor tyrosine kinase inhibitor (Fik-1, IC₅₀ = 700 nM). It inhibits vascular permeability and angiogenesis in cellular and animal models. Very weak inhibitor of PDGFR-kinase, EGFR-kinase and HER-2 kinase.



Reference

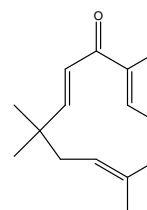
1. Strawn et al. (1996) *Cancer Res* 56:3540; 2. Cudmore et al. (2007) *Circulation* 115:1789

Zerumbone

Cat. No.	Size	Price
BS0293	10 mg	55 €

(2E,6E,10E)-2,6,9,9-Tetramethylcycloundeca-2,6,10-trien-1-one
M.W. 218.33 C₁₅H₂₂O [471-05-6] Desiccate at +4° C
Soluble to 25 mg/ml in DMSO or to 25 mg/ml in ethanol

Potentiates TRAIL-induced apoptosis via upregulation of death receptor DR4 and DR5 expression. It has very little or no cytotoxic effect on the normal human endothelial cells and dermal fibroblasts. A sesquiterpene phytochemical isolated from a type of edible ginger *Zingiber Zerumbet Smith*.



Reference

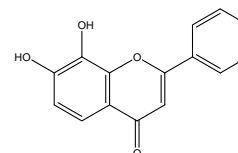
1. Yodkeeree et al. (2009) *Cancer Res* 69:6581; 2. Leu et al. (2009) *Mol Cell* 36:15

7,8-Dihydroxyflavone

Cat. No.	Size	Price
BS0294	100 mg	98 €

7,8-Dihydroxy-2-phenyl-4H-chromen-4-on
M.W. 254.24 C₁₅H₁₀O₄ [38183-03-8] Desiccate at +4° C
Soluble to 100 mM in DMSO or to 25 mM in ethanol

Tyrosine kinase receptor B (TrkB) agonist (K_D = 0.32 μM). It inhibits glutamate-triggered apoptosis in hippocampal neurons *in vitro* and *in vivo*. It blocks long-term spatial memory impairment caused by immobilization stress in rats.



Reference

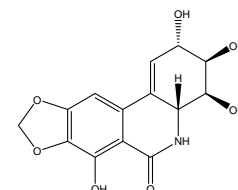
1. Jang et al. (2010) *Proc Natl Acad Sci USA* 107:2687; 2. Andero et al. (2010) *Hippocampus*. 2010 Dec 6. [Epub ahead of print]

Narciclasine

Cat. No.	Size	Price
BS0295	1 mg	125 €

(2S-(2-α,3-β,4-β,4a-β))-3,4,4a,5-Tetrahydro-2,3,4,7-tetrahydroxy-(1,3)Dioxolo(4,5-j)phenanthridin-6(2H)-one; BRN 1087400; Lycoricidin-A; Lycoricidinol; NSC 266535
M.W. 307.26 C₁₄H₁₃NO₇ [29477-83-6] Store at -20° C
Soluble to 10 mg/ml in DMSO or ethanol

A Rho/Rho kinase/LIM kinase/cofilin signaling pathway activator. It displays antiproliferative and pro-apoptotic effects in carcinoma cells and exhibits cytotoxic activity against many cancer cell lines (mean IC₅₀ = 47 nM). It is also an actin stress fiber formation inducer and a plant growth modulator.



Reference

1. Dumont et al. (2007) *Neoplasia* 9:766; 2. Kornienko and Evidente (2008) *Chem Rev* 108:1982; 3. Ingrassia et al. (2009) *J Med Chem* 52:1100; 4. Lefranc et al. (2009) *Mol Cancer Ther* 8:1739

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