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## DATASHEET

YM-254890

### Product overview

<b>Name</b>	YM-254890
<b>Cat No</b>	HB6283
<b>Biological action</b>	Inhibitor
<b>Purity</b>	>98%
<b>Description</b>	Potent G <sub>q/11</sub> signaling inhibitor. Reported as G <sub>q</sub> -G-protein inhibitor and broad-spectrum inhibitor for G <sub>q</sub> - and G <sub>s</sub> -proteins.

### Biological Data

<b>Biological description</b>	G <sub>q</sub> -G-protein inhibitor which potently inhibits Gq/11 heterotrimeric G protein signaling by blocking GDP exchange of GTP on the α- subunit of the G <sub>q</sub> complex. Recently reported to act as a broad-spectrum inhibitor for Gq- and Gs-proteins and exhibits a biased inhibition on Gi/o signaling, without affecting non-GPCR-mediated cellular signaling (Peng et al 2021). Shown to attenuate ADP-, collagen-, TRAP-, arachidonic acid- and U46619-induced platelet aggregation to show antithrombotic effects.
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### Solubility & Handling

<b>Storage instructions</b>	-20 °C
<b>Solubility overview</b>	Soluble in DMSO (10mg/ml)
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

### Chemical Data

<b>Chemical name</b>	[(1 <i>R</i> )-1-[(3 <i>S</i> ,6 <i>S</i> ,9 <i>S</i> ,12 <i>S</i> ,18 <i>R</i> ,21 <i>S</i> ,22 <i>R</i> )-21-acetamido-18-benzyl-3-[(1 <i>R</i> )-1-methoxyethyl]-4,9,10,12,16,22-hexamethyl-15-methylidene-2,5,8,11,14,17,20-heptaoxo-1,19-dioxo-4,7,10,13,16-pentazacyclodocos-6-yl]-2-methylpropyl] (2 <i>S</i> ,3 <i>R</i> )-2-acetamido-3-hydroxy-4-methylpentanoate
<b>Molecular Weight</b>	960.1
<b>Molecular Formula</b>	C <sub>46</sub> H <sub>69</sub> N <sub>7</sub> O <sub>15</sub>
<b>CAS Number</b>	568580-02-9
<b>PubChem identifier</b>	9919454
<b>SMILES</b>	<chem>C[C@@H]1[C@@H](C(=O)O[C@@H](C(=O)N(C(=C)C(=O)N[C@H](C(=O)N([C@H](C(=O)N[C@H](C(=O)N([C@H](C(=O)O1)[C@@H](C)OC)C)[C@@H](C(C)C)OC(=O)[C@H]([C@@H](C(C)C)O)N(C(=O)C)C)C)CC2=CC=CC=C2)NC(=O)C</chem>
<b>Source</b>	Chromobacterium sp.
<b>InChi</b>	InChi=1S/C46H69N7O15/c1-22(2)37(56)34(49-30(11)55)45(63)68-38(23(3)4)35-43(61)53(14)36(28(9)65-15)46(64)66-27(8)33(48-29(10)54)44(62)67-32(21-31-19-17-16-18-20-31)42(60)52(13)25(6)39(57)47-24(5)41(59)51(12)26(7)40(58)50-35/h16-20,22-24,26-28,32-38,56H,6,2
<b>InChiKey</b>	QVYLWCAYZGFGNF-WBWCVBGTSAN

### References

[A novel Galphaq/11-selective inhibitor](#)

Takasaki et al (2004) J Biol Chem. 47438-45  
**PubMedID** [15339913](#)

#### **Functional evidence for biased inhibition of G protein signaling by YM-254890 in human coronary artery endothelial cells**

Peng et al (2021) Eur J Pharmacol. 173706  
**PubMedID** [33152337](#)

#### **Effect of YM-254890, a specific Galphaq/11 inhibitor, on experimental peripheral arterial disease in rats**

Uemura et al (2006) Eur J Pharmacol. 536(1-2)  
**PubMedID** [16566917](#)

#### **Biological properties of a specific Galpha q/11 inhibitor, YM-254890, on platelet functions and thrombus formation under high-shear stress**

Uemura et al (2006) Br J Pharmacol. 148(1)  
**PubMedID** [16520742](#)

#### **Pharmacological properties of YM-254890, a specific G(alpha)q/11 inhibitor, on thrombosis and neointima formation in mice**

Kawasaki et al (2005) Thromb Haemost. 94(1)  
**PubMedID** [16113802](#)

#### **Structural and Dynamical Basis of G Protein Inhibition by YM-254890 and FR900359: An Inhibitor in Action**

Tietze et al (2019) J Chem Inf Model. 59(10)  
**PubMedID** [31539242](#)

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