上海源叶生物科技有限公司
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产品名称：Strontium Ranelate
CAS 号：135459-87-9
产品货号：S80295

生物活性：

Description

Strontium Ranelate (S12911) 是一种抗骨质疏松活性分子，其作用是通过减少骨吸收并促进骨形成，从而诱导正骨平衡。Strontium Ranelate 还可以激活非骨骼细胞中的钙敏感受体 (CaSR)，从而导致肌醇 1、4、5-三磷酸生成和丝裂原活化的蛋白激酶信号转导.

In Vitro

Strontium Ranelate (0.1-1 mM; 22 days; Mouse calvaria cells) treatment shows the expression of mRNA for early osteoblast markers (alkaline phosphatase, ALP) is visualized by day 5, while late markers (osteocalcin, OCN) are detectable only by day 15 and beyond[1].

Strontium Ranelate (0.1-1 mM; 22 days; Mouse calvaria cells) treatment results in significantly increases the mRNA expression of the osteoblastic markers ALP, BSP and OCN at day 22 of MC cell culture[1].

Strontium Ranelate is found to increase alkaline phosphatase activity and prostaglandin E2 production in a COX-2 dependent manner in murine marrow stromal cells[2]。

RT-PCR[1]

Cell Line:	Mouse calvaria (MC) cells
Concentration:	0.1 mM, 0.3 mM or 1 mM
Incubation Time:	22 days
Result:	The expression of mRNA for early osteoblast markers (ALP) was visualized by day 5, while late markers (OCN) were detectable only by day 15 and beyond.

Western Blot Analysis[1]

Cell Line:	Mouse calvaria (MC) cells
Concentration:	0.1 mM, 0.3 mM or 1 mM
Incubation Time:	22 days
Result:	Significantly increased the mRNA expression of the osteoblastic markers ALP, BSP and OCN at day 22 of MC cell culture.

In Vivo

Strontium Ranelate increases bone formation and decreased bone resorption, which results in increased bone mass in the vertebrae of intact adult mice[2].

In intact adult rats, Strontium Ranelate also increases bone mass, as measured by dual-energy X-ray absorptiometry, in lumbar vertebra and femur, and this is confirmed by histological assessment of trabecular bone volume in the tibial metaphysis[2].

Strontium Ranelate is found to decrease bone resorption and to increase bone formation in alveolar bone in normal adult monkeys (Macaca fascicularis), which exhibits extensive bone remodeling[2].

In ovariectomized rats, short-term (3 months) treatment with Strontium Ranelate prevents trabecular bone loss induced by oestrogen deficiency, as demonstrated by bone ash, bone mineral content and histomorphometric analysis in the tibial metaphysis. This effect results from decreased bone resorption while bone formation was maintained. These beneficial effects of Strontium Ranelate on bone mass and microarchitecture in ovariectomized rats are confirmed in long-term experiments. In this long-term study (2 years), the increase in bone mass and microarchitecture induced by Strontium Ranelate results in a marked improvement in bone strength, supporting the beneficial effect of this drug on bone resistance[2]。

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Solvent&Solubility

细胞实验:

0.1 M HCl 中的溶解度 ：17.5 mg/mL (34.08 mM; 超声助溶; 酸性条件溶解 (HCl 调节，pH≈3))

H2O 中的溶解度 ：2 mg/mL (3.89 mM; 超声助溶 (<60°C))

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.9475 mL	9.7373 mL	19.4746 mL
	5 mM	0.3895 mL	1.9475 mL	3.8949 mL
	10 mM	0.1947 mL	0.9737 mL	1.9475 mL

*请根据产品在不同溶剂中的溶解度，选择合适的溶剂配制储备液；该产品在溶液状态不稳定，建议您现用现配，即刻使用。

* 备注：如您选择水作为储备液，请稀释至工作液后，再用 0.22 μm 的滤膜过滤除菌后使用。

动物实验：

以下溶解方案，请直接配制工作液。建议现用现配，在短期内尽快用完。 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比； 如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶。

方案 一

请依序添加每种溶剂： Saline

Solubility: 2 mg/mL (3.89 mM); 澄清溶液; 超声助溶 (<60°C)

参考文献

[1]. Bonnelye E, Chabadel A, Saltel F, Jurdic P. Dual effect of strontium ranelate: stimulation of osteoblast differentiation and inhibition of osteoclast formation and resorption in vitro. Bone. 2008 Jan;42(1):129-38. Epub 2007 Sep 12.

[2]. Marie PJ. Strontium ranelate: a dual mode of action rebalancing bone turnover in favour of bone formation. Curr Opin Rheumatol. 2006 Jun;18 Suppl 1:S11-5.

完整储备液配制表：

请根据产品在不同溶剂中的溶解度，选择合适的溶剂配制储备液；该产品在溶液状态不稳定，建议您现用现配，即刻使用。

可选溶剂	质量 / 溶剂体积 / 浓度	1 mg	5 mg	10 mg	25 mg
H2O / 0.1 M HCl	**1 mM**	1.9475 mL	9.7373 mL	19.4746 mL	48.6864 mL
0.1 M HCl	**5 mM**	0.3895 mL	1.9475 mL	3.8949 mL	9.7373 mL
	10 mM	0.1947 mL	0.9737 mL	1.9475 mL	4.8686 mL
	15 mM	0.1298 mL	0.6492 mL	1.2983 mL	3.2458 mL
	20 mM	0.0974 mL	0.4869 mL	0.9737 mL	2.4343 mL
	25 mM	0.0779 mL	0.3895 mL	0.7790 mL	1.9475 mL
	30 mM	0.0649 mL	0.3246 mL	0.6492 mL	1.6229 mL

备注：如您选择水作为储备液，请稀释至工作液后，再用 0.22 μm 的滤膜过滤除菌后使用。