Robatumumab

Cat. No.:	HY-P99218
CAS No.:	934235-44-6
Target:	IGF-1R
Pathway:	Protein Tyrosine Kinase/RTK
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Robatumumab (Sch 717454) is an anti-human IGF-1R (insulin-like growth factor receptor-1) antibody. Robatumumab shows anti-tumor activity and anti-proliferative activity to cancer cells. Robatumumab can be used in osteosarcoma and Ewing sarcoma research[1][2].

In Vitro

Robatumumab (0.02-80 nM; 0.5 or 4 h) downregulates IGF-IR and inhibits both basal and IGF-I-induced phosphorylation of IGF-IR and IRS-1 in SK-N-FI cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Western Blot Analysis[2]

Cell Line:	SK-N-FI cells
Concentration:	0.02-80 nM
Incubation Time:	0.5 or 4 hours
Result:	Inhibited the IGF-I–stimulated phosphorylation of IGF-IR after treatment 0.5 h. Resulted in both inhibition of IGF-IR phosphorylation and receptor downregulation after treatment 4 h. Resulted in a dose-dependent inhibition of the IGF-I–stimulated IRS-1 phosphorylation.

In Vivo

Robatumumab (intravenous injection; 0.04 or 0.1 mg/mouse; twice weekly; 18 d) inhibits the SK-N-FI tumor growth in xenograft model[2].

Robatumumab (intravenous injection; 0.02-0.5 mg/mouse; twice weekly; 35 d) inhibits the osteosarcoma growth in xenograft model[2].

Robatumumab (intravenous injection; 0.1 or 0.5 mg/mouse; twice weekly; 14 d) inhibits the SJCRH30 and RD rhabdomyosarcoma cell growth in xenograft model[2].

Robatumumab (intravenous injection; 0.1 or 0.5 mg/mouse; twice weekly; 2 w) blocks effectively pediatric tumor cell proliferation in vivo[2].

Robatumumab (intravenous injection; 0.5 mg/mouse; once; day 11 post-inoculation) modulates the blood vessel formation via its antiangiogenesis effect[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Nude mice inoculated with SK-N-FI tumor cells[2]
Dosage:	0.04 or 0.1 mg/mouse
Administration:	Intravenous injection; 0.04 or 0.1 mg/mouse; twice weekly; 18 days
Result:	Inhibited the SK-N-FI xenograft tumor by 96% in the 0.04 mg dose group and resulted in 11% tumor regression in the 0.1 mg dose group.

Animal Model:	Nude mice inoculated with SJSA-1 osteosarcoma[2]
Dosage:	0.02, 0.1 or 0.5 mg/mouse
Administration:	Intravenous injection; 0.02, 0.1 or 0.5 mg/mouse; twice weekly; 35 days
Result:	Inhibited the tumor growth by 71%, 82%, and 88% at 0.02, 0.1, and 0.5 mg, respectively, at day 14 after treatment.

Animal Model:	Nude mice inoculated with SJCRH30 and RD rhabdomyosarcoma cells[2]
Dosage:	0.1 or 0.5 mg/mouse
Administration:	Intravenous injection; 0.1 or 0.5 mg/mouse; twice weekly; 14 days
Result:	Inhibited tumor growth by 39% and 58% at 0.1 and 0.5 mg dose, respectively, in the RD rhabdomyosarcoma model. Inhibited tumor growth by 37% and 53% at 0.1 and 1 mg dose, respectively, in the SJCRH30 model.

Animal Model:	Nude mice inoculated with SK-N-FI neuroblastoma and SJSA-1 osteosarcoma[2]
Dosage:	0.1 or 0.5 mg/mouse
Administration:	Intravenous injection; 0.1 or 0.5 mg/mouse; twice weekly; 2 weeks
Result:	Reduced the tumor Ki-67 staining by 38% and along with significant change in SK-N-FI neuroblastoma xenograft. Reduced the staining of Ki-67 by 37% and 51% after 0.1 and 0.5 mg SCH 717454 treatment, respectively, in the SJSA-1 osteosarcoma xenograft.

Animal Model:	Nude mice inoculated with SJSA-1 osteosarcoma[2]
Dosage:	0.5 mg/mouse
Administration:	Intravenous injection; 0.5 mg/mouse; once; day 11 post-inoculation
Result:	Reduced in the intensity of the fluorescent lectin staining by 74% at 0.5 mg dose, showing thinner blood vessels and reduced branches, compared with control IgG1.

REFERENCES

[1]. Anderson PM, et al. A phase II study of clinical activity of SCH 717454 (robatumumab) in patients with relapsed osteosarcoma and Ewing sarcoma. Pediatr Blood

Cancer. 2016 Oct;63(10):1761-70.

[2]. Wang Y, et al. A fully human insulin-like growth factor-I receptor antibody SCH 717454 (Robatumumab) has antitumor activity as a single agent and in combination with cytotoxics in pediatric tumor xenografts. Mol Cancer Ther. 2010 Feb;9(2):410-8.

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