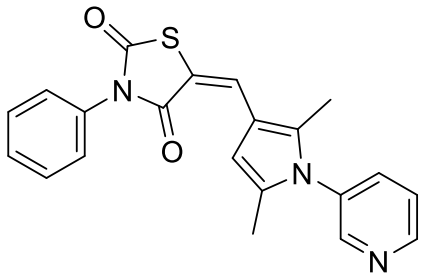
Product data sheet

MedKoo Cat#: 555248 Name: iCRT14 CAS#: 677331-12-3 Chemical Formula: $C_{21}H_{17}N_3O_2S$ Exact Mass: 375.1041 Molecular Weight: 375.446	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
iCRT14 is a potent inhibitor of β-catenin-responsive transcription (CRT) that inhibits Wnt signaling in a reporter assay in vitro (IC50 = 40.3 nM). It inhibits the interaction between β-catenin and T cell factor 4 (Tcf4) in quantitative reporter assays of β-catenin/Tcf4 binding (Ki = 53.51 μM).

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMSO	37	98.55

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.66 mL	13.32 mL	26.63 mL
5 mM	0.53 mL	2.66 mL	5.33 mL
10 mM	0.27 mL	1.33 mL	2.66 mL
50 mM	0.05 mL	0.27 mL	0.53 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Gonsalves FC, Klein K, Carson BB, Katz S, Ekas LA, Evans S, Nagourney R, Cardozo T, Brown AM, DasGupta R. An RNAi-based chemical genetic screen identifies three small-molecule inhibitors of the Wnt/wingless signaling pathway. Proc Natl Acad Sci U S A. 2011 Apr 12;108(15):5954-63. doi: 10.1073/pnas.1017496108. Epub 2011 Mar 10. PMID: 21393571; PMCID: PMC3076864.

2. Bilir B, Kucuk O, Moreno CS. Wnt signaling blockage inhibits cell proliferation and migration, and induces apoptosis in triple-negative breast cancer cells. J Transl Med. 2013 Nov 4;11:280. doi: 10.1186/1479-5876-11-280. PMID: 24188694; PMCID: PMC4228255.

In vivo study

1. Gonsalves FC, Klein K, Carson BB, Katz S, Ekas LA, Evans S, Nagourney R, Cardozo T, Brown AM, DasGupta R. An RNAi-based chemical genetic screen identifies three small-molecule inhibitors of the Wnt/wingless signaling pathway. Proc Natl Acad Sci U S A. 2011 Apr 12;108(15):5954-63. doi: 10.1073/pnas.1017496108. Epub 2011 Mar 10. PMID: 21393571; PMCID: PMC3076864.

7. Bioactivity
Biological target:

Product data sheet

iCRT 14 is a novel potent inhibitor of β-catenin-responsive transcription (CRT), with IC50 of 40.3 nM against Wnt responsive STF16 luciferase.

In vitro activity

To investigate the effectiveness of five different compounds targeting the Wnt pathway in breast cancer cells, the inhibitory effects of iCRT-14 on cell proliferation were tested in BT-549, MDA-MB-231, HCC-1143 and HCC-1937 cell lines using the xCELLigence system that allows continuous and quantitative monitoring of cell status in real-time. Cells were treated with increasing concentrations and assayed for 48 hours. The concentration range for treatment with each inhibitor was determined based on previous studies. This analysis showed that it induced differential effects on proliferation of these TNBC cells in a dose- and time-dependent manner (Figure 3; see Additional file 4: Figure S3, Additional file 5: Figure S4 and Additional file 6: Figure S5). These findings were confirmed using an alternative cell viability assay, the Cell Titer-Glo luminescent cell viability assay (see Additional file 7: Figure S6).

Reference: J Transl Med. 2013 Nov 4;11:280. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/24188694/

In vivo activity

The HCT116 and HT29 xenograft models were chosen: both of these result in rapidly proliferating tumors when implanted s.c. in athymic nude mice. After measurable tumors of at least 80–120 mm3 volume were established, the animals were administered iCRT14 (dissolved in DMSO) at a concentration of 50 mg/kg. The compound was administered by i.p. injection three times a week for 3 wk. Immunostaining of xenograft sections after different time periods revealed a marked decrease in CycD1 compared with DMSO-treated controls (Fig. S5 A and B). This coincided with reduced proliferation of the tumors, reflected by fewer numbers of cells staining positive for phospho-histone3 in drug-treated tumors (Fig. S5 C and D); similar results were seen in HT29 xenografts (Fig. S5 E–H). Furthermore, these effects were correlated with a marked reduction (~50%) in the initial growth rate of tumors within the first 3 wk (~day 19) of compound administration (Fig. S5 I and J). After day 19, however, the rate of tumor growth was comparable with that of DMSO-treated control. Administration of a lower concentration of compound (20 mg/kg) by minipump also resulted in identical effects in HCT116 xenografts (Fig. S5I). Importantly, throughout the course of the study, the mice did not display any signs of systemic toxicity or weight loss that would indicate off-target or nonspecific effects.

Reference: Proc Natl Acad Sci U S A. 2011 Apr 12;108(15):5954-63. https://www.ncbi.nlm.nih.gov/pmc/articles/pmid/21393571/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.