



Wnt Pathway

Integrated Solutions for
Screening Wnt Regulators

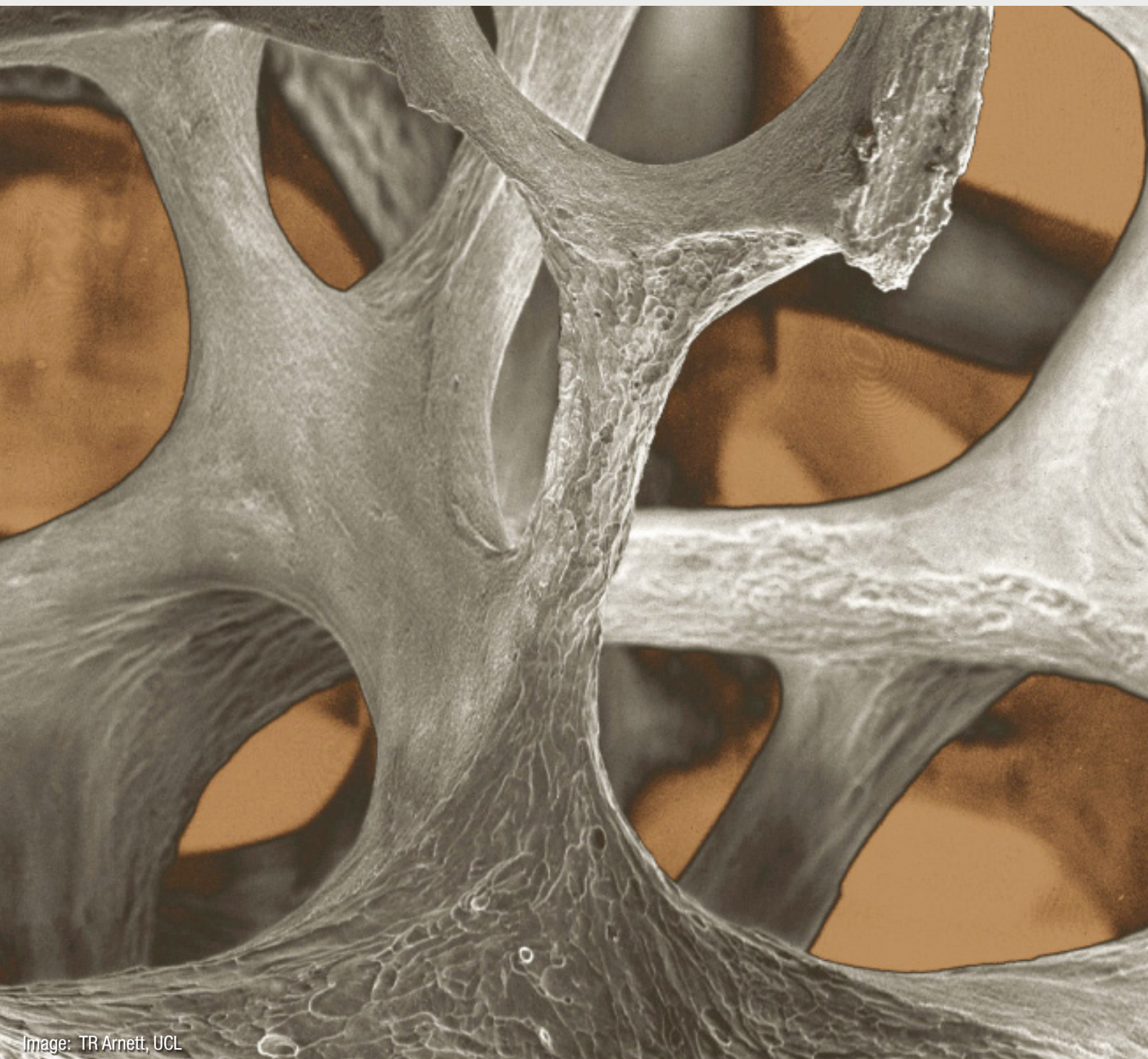


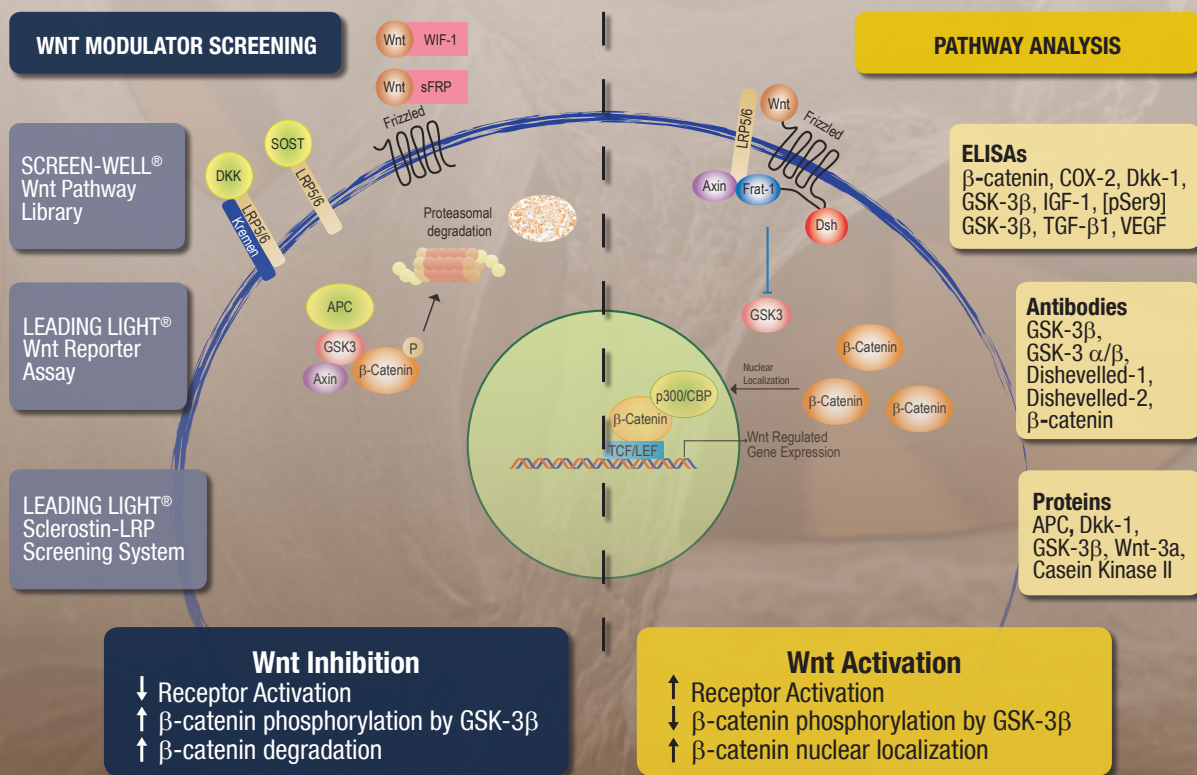
Image: TR Arnett, UCL

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SOLUTIONS FOR WNT PATHWAY SCREENING

High-throughput Assays for Canonical Wnt Pathway Analysis

Since the discovery of the Wnt gene over 30 years ago as the *Int1* proto-oncogene involved in the pathology of Mouse Mammary Tumor Virus (MMTV), Wnt expression and signal transduction have been identified as critical components in regulating embryogenesis, cell proliferation, and bone, glucose, and lipid metabolism. Perturbations in Wnt expression, surface receptors, signaling partners (including β -catenin and GSK-3 β), and the battery of Wnt-regulated genes (collectively the canonical Wnt pathway) are known to manifest in a variety of clinically relevant disease states, including cancer, osteoporosis, cardiovascular disease, diabetes, and neurodegeneration.



Cell-Based Assays & Biomarker Detection

Enzo's panel of fluorescence-based live cell assays are designed to assess the impact of toxic agents on overall cell function, with particular emphasis on the plasma membrane, lysosomal, mitochondrial and nuclear compartments. Many of the assays have been optimized for analysis by flow cytometry, while others are geared towards microplate-based cytometry.

Our portfolio of over 300 ELISA & detection kits includes sensitive, specific assays for relevant markers of cell viability, signaling pathways, and organ-specific toxicity. Over 40 years of assay development experience and state-of-the-art manufacturing facilities ensure time-tested reproducibility.

Small Molecule Chemistry

Our long-standing, flagship SCREEN-WELL® Compound Library product family offers an easy, ready-to-use method to streamline compound screening. We have a unique offering of focused compound libraries for organ-specific toxicology, as well as FDA approved drugs, natural products, chemical genomics, pathway targeting, and more.

Our in-house chemical production capabilities, combined with our supplier network built over a 40 year history, gives us the ability to rapidly and inexpensively source traditional, custom, and bulk compounds in the gram to kilogram scale. We complete our sourcing using stringent quality control standards with state-of-the-art methods.

Development of Wnt pathway modulating drugs requires the ability to rapidly screen the effects of novel or repurposed compounds and biological therapeutics on the expression of Wnt-regulated genes, and confirmation of such effects by related changes in key signaling components. Together, the LEADING LIGHT® Wnt Reporter Assay, LEADING LIGHT® Sclerostin-LRP Interaction Screening System, and SCREEN-WELL® Wnt Pathway Library facilitate high-throughput analysis of Wnt-related signaling.

Reliable, All-inclusive Screening of Wnt Pathway Modulators

The LEADING LIGHT® Wnt Reporter Assay Starter Kit is a high-sensitivity, luciferase-based assay for the analysis of canonical Wnt signaling. The assay uses a 3T3 mouse fibroblast cell line modified with a luciferase reporter gene under the control of Wnt-responsive promoters (TCF/LEF). The chemiluminescent readout is amenable to both 96-well and 384-well plate formats, facilitating high-throughput analysis of Wnt pathway activators and inhibitors.

- **A true end-point detection system** for screening compounds
- **Greater sensitivity** than other whole cell assay kits on the market
- **Reproducibility** that comes from using a validated system
- **Time-saving, no-transfection** kit includes cells, media, detection reagents and controls

Product Name	Product #
Wnt-3a (mouse), (recombinant)	ENZ-60001
Dkk-1 (mouse), (recombinant) (active)	ENZ-60002
LEADING LIGHT® Wnt Reporter Cell Line	ENZ-61002
LEADING LIGHT® Wnt Cell Line Medium Pack	ENZ-60003
LEADING LIGHT® Wnt Cell Line Assay Reagents	ENZ-60004

LEADING LIGHT® Cells
Growth Medium
Assay Medium
Freezing Medium



F TCF TCF TCF TCF TCF TATA FIREFLY LUCIFERASE

Wnt Reporter Cell Line

Wnt-3a Protein
Dkk-1 Protein
Lithium Chloride (Optional)



Intact Pathway For Screening Flexibility

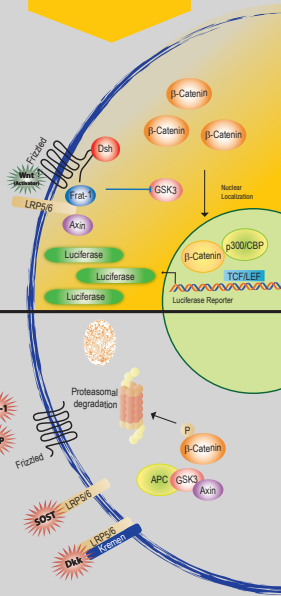
- Small Molecules
- Biotherapeutics
- Genetically Modified Cells
(e.g. transfect, siRNA, etc.)



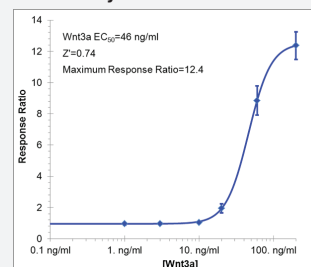
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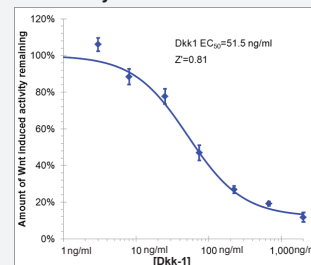
Luciferase Substrate
Luciferase Assay Buffer



Activation by Wnt-3a Protein



Inhibition by Dkk-1



SCREEN WNT PATHWAY ACTIVATORS & INHIBITORS

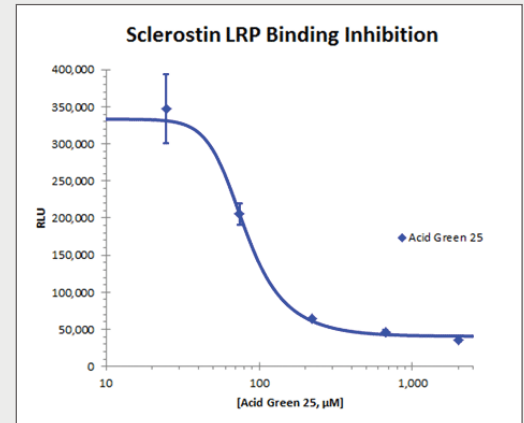
LEADING LIGHT® Sclerostin-LRP Interaction Screening System (ENZ-61003)

Novel Cell-free Sclerostin/LRP Binding Assay Ideal for Primary Inhibitor Screens

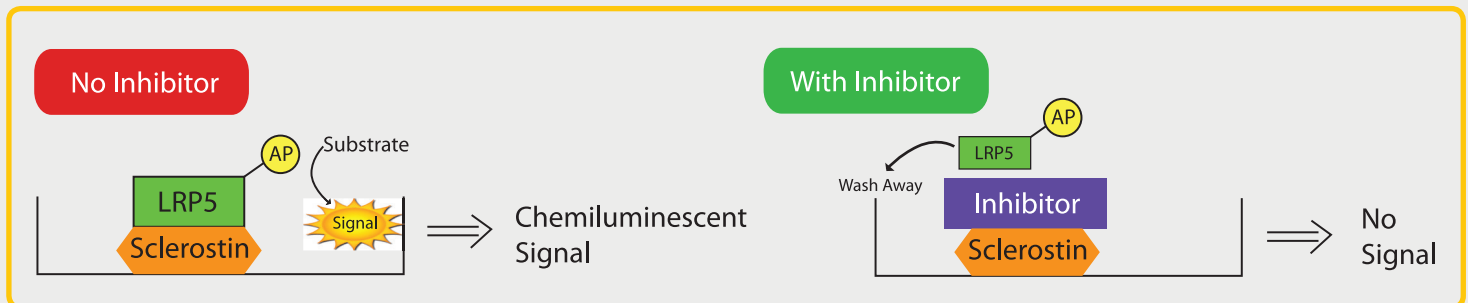
Sclerostin is encoded by the SOST gene and serves as a negative regulator of bone formation. Wnt ligands bind to Frizzled (Fz) and LRP5/6 receptors to trigger the canonical Wnt signaling cascade, which has been reported to play an important role in bone development. Sclerostin can bind to LRP5/6 to inhibit the canonical Wnt signaling. The LEADING LIGHT® Sclerostin-LRP Screen System is a simple and rapid biochemical assay which does not require cell lines or transfection reagents, making it a convenient platform for initial screening of inhibitors of the Wnt antagonist Sclerostin.

- High-sensitivity chemiluminescent readout (signal-to-noise ratio of ≥ 10)
- Rapid protocol yields results in just 2.5 hours
- No cell lines or transfection reagents required
- Reproducible, high-throughput amenable assay (Z' -factor 0.871)
- Amenable for high-throughput screening applications

Measurement of Standard Curve of Sclerostin-LRP



Inhibition of Sclerostin binding by Acid Green 25. The LRP5-ALP was bound to sclerostin in the presence of the indicated concentration of Acid Green 25 used to inhibit this interaction.



SCREEN-WELL® Wnt Pathway Compound Library (BML-2838)

The SCREEN-WELL® Wnt Pathway Library offers a convenient solution for benchmarking compounds against a collection of 75 known Wnt modulators. The library is available in 100 μL and 500 μL formats (dissolved in DMSO) for use as a companion to the LEADING LIGHT® Wnt Reporter Assay or individually as a general screening tool for chemical genomics or Wnt assays.

SCREEN-WELL® Wnt Pathway Library Targets Include:

Wnt5a	Dkk	Axin	Porcupine	β -catenin	LRP5/6
TCF	Dishevelled	GSK-3 β	Adenylate Cyclase	COX-II	sFRP-1

QUANTIFY CRITICAL WNT PATHWAY PROTEINS

Sensitive Wnt Pathway ELISA Kits

Obtain fully quantitative data with immunometric detection of β -Catenin, total and phosphorylated GSK-3 β , and Dkk-1 in human, mouse and rat samples.

- Sensitive assays measure picogram levels compared to microgram levels in Western blot
- Suitable for cell lysates, culture supernates, plasma or serum samples (see table)
- High-throughput format allows analysis of 40 samples in duplicate in less than 3 hours
- Simple protocols and liquid color-coded reagents save time and reduce error

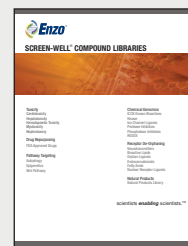
PRODUCT	PRODUCT #	SENSITIVITY	SPECIFICITY			SAMPLE TYPES			
			Human	Mouse	Rat	Cell Lysates	Culture Supernates	Serum	Plasma
β -catenin	ADI-900-135	27.0 pg/mL	•	•	•	•			
COX-2 (human) ELISA Kit	ADI-900-094	0.25 ng/mL	•			•			
Dkk-1	ADI-900-151	0.98 pg/mL	•				•	•	•
	ADI-900-172	116.7 pg/mL		•			•	•	•
	ADI-900-172	26.1 pg/mL			•		•	•	•
GSK-3 β	ADI-900-144	74.4 pg/mL	•		•	•			
IGF-1 (human), ELISA Kit	ADI-900-150	48.5 pg/mL	•					•	•
[pSer9] GSK-3 β	ADI-900-123A	9.0 pg/mL	•	•	•	•			
TGF- β 1 ELISA Kit	ADI-900-155	3.3 pg/mL	•	•	•		•	•	•
VEGF (human), ELISA Kit	ENZ-KIT156	3.979 pg/mL	•				•	•	•

Highly Characterized Wnt-Related Proteins & Antibodies

Enzo offers a wide selection of high-quality reagents for analysis of Wnt related signal transduction, including purified proteins and thoroughly validated monoclonal and polyclonal antibodies.

SELECT WNT PATHWAY PROTEINS & ANTIBODIES			
Product Name	Product #	Product Name	Product #
Agrin, mAb (Agr-247)	ADI-AGR-540	GSK-3 β , pAb	ADI-KAP-ST002
Axin-1 (human), (recombinant)	ENZ-PRT130	Laminin (human fibroblasts)	ENZ-PRT159
Axin-2 (human), (recombinant)	ENZ-PRT131	Laminin-2, mAb (4H8-2)	ALX-804-190
β -Catenin, mAb (12F7)	ADI-KAM-ST001	MMP-9 (catalytic domain) (human)	BML-SE360
BMP-4 (human), (recombinant)	ENZ-PRT146	NGAL (rat), mAb (8)	BPD-ABS-039-08
BMP-4, mAb (26H16)	ADI-905-757	Noggin (human), (recombinant)	ENZ-PRT127
BMP-4, mAb (6B7)	ADI-905-834	Osteocalcin (mouse), pAb	ALX-210-333
Casein Kinase II (human), (recombinant)	BML-SE124	Osteopontin, mAb (53)	ADI-905-629
Collagen I, rat tail	ALX-522-435	Osteoprotegerin (human), mAb	ALX-804-813B
Dishevelled-1, pAb	BML-DA4170	VE-cadherin, pAb	ALX-210-232
Dishevelled-2, pAb	BML-DA4270	VEGF, mAb (6B7)	ADI-905-164
Dkk-1 (mouse), (recombinant) (His-tag)	ADI-KPR-CP100	VEGF-121 (human), (recombinant)	ENZ-PRT128
EGF (human), (recombinant)	ENZ-PRT154	VEGF-121 (human), (recombinant)	ENZ-PRT129
Fibronectin (human plasma)	ENZ-PRT158	Vitronectin (human), (recombinant)	ENZ-PRT179
GSK-3 α/β , mAb (1H8)	ADI-KAM-ST002	Wnt-3a (mouse), (recombinant)	ENZ-60001
GSK-3 β (human), (recombinant) (GST-tag)	BML-SE355	Wnt-1, pAb	ADI-905-617

You may also be interested in:



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