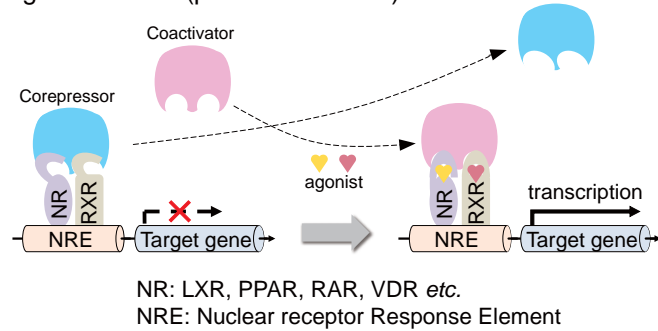


# Retinoid X receptor ligand screening system for drug or functional food discovery

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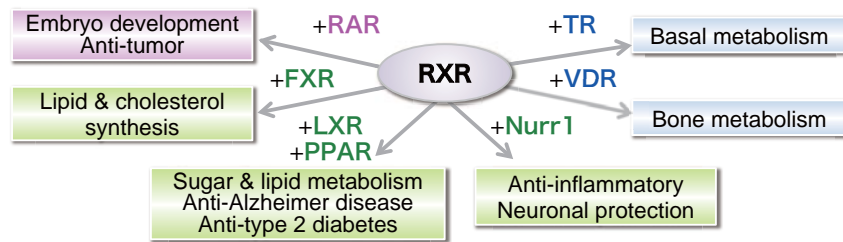
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**Retinoid X receptors (RXRs)** are nuclear receptors that function as homodimers or heterodimers with other nuclear receptors. Permissive heterodimers, such as LXR/RXR and PPAR/RXR, can be activated by RXR agonists alone (permissive effect).

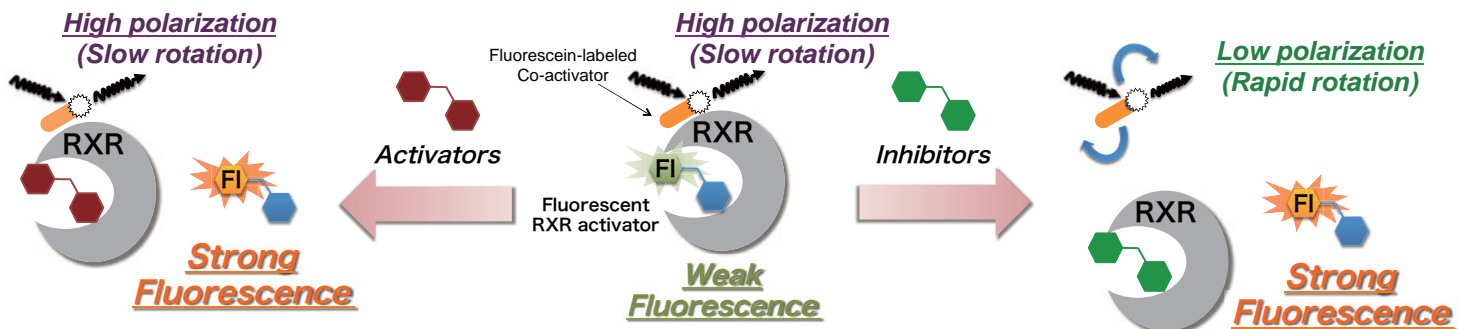


## RXRs as therapeutic drug targets

- Anti-dyslipidemia
- Anti-atherosclerosis
- Anti-diabetes
- Anti-cancer
- Anti-autoimmune disease
- Anti-allergy
- Anti-Alzheimer's disease
- Anti-Parkinson's disease etc



**Our Method** Using a Fluorescent Polarization Microplate Reader, **Simultaneous** and **Short Time** Measurement of **Binding** and **Function** of Test Compounds toward RXR are Available!



JP Patent 2015-237017

This principle is applicable to other nuclear receptors.

## Acknowledgement

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## Current RXR Screening Techniques

Current techniques	Principle	Advantages	Disadvantages	Required time
Reporter Gene Assay	Evaluating transcriptional activity of test compounds using living cells	Transcriptional activity measurable	Many hours required	(Several hours)×(3–4 days)
Time-Resolved Fluorescence Resonance Energy Transfer (TR-FRET)	Detecting co-activator recruitment	Data suggesting RXR agonist activity are obtainable	TR-FRET msicroplate Reader required	Several hours
Binding Assay using Radioactive Compounds	Detecting competition reaction with RI-labeled compound	High sensitivity	Special facility and legal regulation (in Japan), Complicated operation requested B/F separation required (B: bond, F: free)	(4–5 hours)×(2 days)
Surface Plasmon Resonance (SPR) (Biacore®)	Detecting changes in refractive index at the surface of a sensor	ka (on-rate) and kd (off-rate) calculatable	Expensive instrument required Low through-put	Several hours – Several days