# Transactivation Assays for PPARγ and LXRα

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Nuclear Receptors are proteins that are involved in many different diseases including cancer, obesity, and diabetes. Finding chemicals that can inhibit the harmful functions of Nuclear Receptors and not affect the positive functions is a key to drug discovery. Amplifying the Nuclear Receptors and putting them into usable vectors is the first step in this complex discovery process. Transactivation assays are performed after this amplification to test the biological response of different chemicals on these Nuclear Receptors. Using this data, graphs were made to find exactly how these chemicals work on the Nuclear Receptor, and if they can pass on to other tests. The findings in this experiment in the Nuclear Receptor PPARγ saw the chemical MRL24 show an antagonist response, 1663 show a partial agonist response, and 10221 show an inverse agonist response. In LXRα, T09 was unclear to its biological response, SR1903 showed a partial agonist response, and 2211 showed an inverse agonist response. Although T09 was unclear, conclusions can be drawn on the other five chemicals. Using this data, other cellular assays can be done using these chemicals and Nuclear Receptors to better understand the interactions between them. Taking all of this data into effect, eventually drugs could be found that could substantially change the way we treat many diseases that ravage the human population.