# Cell Receptor Laboratory

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Name _____ Date _____ Per. _____

**Cell receptors** are imbedded in the cell membrane and will attach to specific chemicals. Once this specific chemical fits into the receptor, it will release a message to the cell's nucleus and instruct it to do something. Cell receptors are very specific, like antibodies. As a matter of fact, some receptors are antibodies that imbed themselves into the cell membrane.

Many chemicals will bind to the cell receptors. The male hormone **testosterone** will bind to cell receptors on muscle cells and tell them to increase growth, but will not fit into cell receptors for nerve cells. The female hormone **prolactin** will fit into breast cells and trigger milk production. Mast Cells contain sacks of **histamine**. Sometimes substances like pollen or bee venom will fit into the receptors and the histamine will be released. This is an **allergic** response. If you can get **antibodies** from your blood stream to bind to these **allergens** first, before they reach the mast cells, you can avoid the allergic reaction.

**T-Lymphocytes** (Immune Cells), have receptors called **CD4**. Immune chemical messengers called **Interleukins** will bond here and tell the cell what to do. H.I.V. will also bind at CD4 and shut down the cell. When CD4 T-Lymphocytes have a count lower than 200 per uL, the patient develops AIDS.

Some **steroids** are artificial hormones. Often they have many negative side affects since they trigger off growth in cells. People taking steroids for muscle growth may induce the cells to grow uncontrollably, this is cancer. Fertility drugs are hormones (**FSH**) that initiate a woman's ovary to generate more eggs. Unfortunately, it may elicit ovarian cancer. Women that have ovarian cancer in their family are usually advised not to use fertility drugs.

**Purpose**: To understand how cell receptors work..

**Materials**: Scissors and glue sticks.

**Procedures:**

1) On the next two pages are different cells with receptors.
2) Cut out the different chemical messages on the following page and glue them into the appropriate site.
3) Under each cell, fill in the name of the cell and what will happen to it.