|  |  |
| --- | --- |
| Active transport | Passive transport |
| Protein Pumping | Simple Diffusion |
| Exocytosis | Osmosis |
| Endocytosis | Facilitated Diffusion |
| Moving from LOW concentration to HIGH concentration | Moving from HIGH concentration to LOW concentration |
| Moving UP or AGAINST the concentration gradient | Moving DOWN or with the concentration gradient |
| ATP energy IS required | ATP energy IS NOT required |
| Moves cells **away from** equilibrium | Moves cells closer **towards** equilibrium |
| Cytoplasm membrane extracellular fluid

|  |  |
| --- | --- |
| ATPPTlP |  |

 | Cytoplasm membrane extracellular fluid

|  |  |
| --- | --- |
|  |  |

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| ATPPPTlPATPPTlP |  |
|  |  |
| Cell transport over the plasma membrane that requires the CELL to do WORK! | Cell transport over the plasma membrane that DOES NOT require the CELL to do WORK! |
| Water moves out of the cellFrom hypertonicTo hypotonicThis is why desalination uses so much electricity to remove salt from sea water. | From hypotonic towards hypertonic  |