A bipartite graph of Neuroendocrine System[1] ZHONG-WEI GUO, SHENG-RONG ZOU, YU-JING PENG, TA ZHOU, CHANG-GUI GU, DA-REN HE, Yangzhou University — We present an empirical investigation on the neuroendocrine system and suggest describe it by a bipartite graph. In the net the cells can be regarded as collaboration acts and the mediators can be regarded as collaboration actors. The act degree stands for the number of the cells that secrete a single mediator. Among them bFGF (the basic fibroblast growth factor) has the largest node act degree. It is the most important mitogenic cytokine, followed by TGF-beta, IL-6, IL1-beta, VEGF, IGF-1and so on. They are critical in neuroendocrine system to maintain bodily healthiness, emotional stabilization and endocrine harmony. The act degree distribution shows a shifted power law (SPL) function forms [1]. The average act degree of neuroendocrine network is h=3.01, It means that each mediator is secreted by three cells on average. The similarity, which stands for the average probability of secreting the same mediators by all neuroendocrine cells, is observed as s=0.14. Our results may be used in the research of the medical treatment of neuroendocrine diseases. [1] Assortativity and act degree distribution of some collaboration networks, Hui Chang, Bei-Bei Su, Yue-Ping Zhou, Daren He, Physica A, 383 (2007) 687-702

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