dv biologics

*Fall 2014* Newsletter

# Proven Functional, Proven Quality Adult Adrenal Gland Cells

The adrenal glands which sit at the top of the kidneys are an essential part of the endocrine system. They are primarily responsible for releasing hormones in response to stress. The adrenal cortex synthesizes well over two dozen hormones—including cortisol. Cortisol is released in response to stress and a low level of blood glucose. Its primary functions are to increase blood sugar and suppress the immune system.[1] It aids in the metabolism of fat, protein, and carbohydrate. In addition, it also decreases bone formation.[2] Cortisol is released in response to adrenocorticotropic hormone (ACTH).[3]

DV Biologics now offers adult human Adrenal Gland Cells (Uncultured) (AE006-F) for those who are researching adrenal fatigue and other endocrine system disorders such as Addison disease and Cushing's syndrome. These primary cells contain a mixed cell population and strongly mimic the *in vivo* environment. Our cells express adrenal markers as shown through immunocytochemistry (ICC) staining (Figure 1) and are functional as demonstrated by ELISA (Figure 2). Whether you are performing basic research or biomarker assays for diet drugs, diabetes, or bone formation, our top quality cells are well characterized and ready to ship for immediate use. Interested in culturing these cells? We recommend our optimized cell culture medium, I-Gro .

This product is part of our ever growing library of well characterized, functional human primary cells. Please visit www.dvbiologics.com for more information about our products and cellular research services.

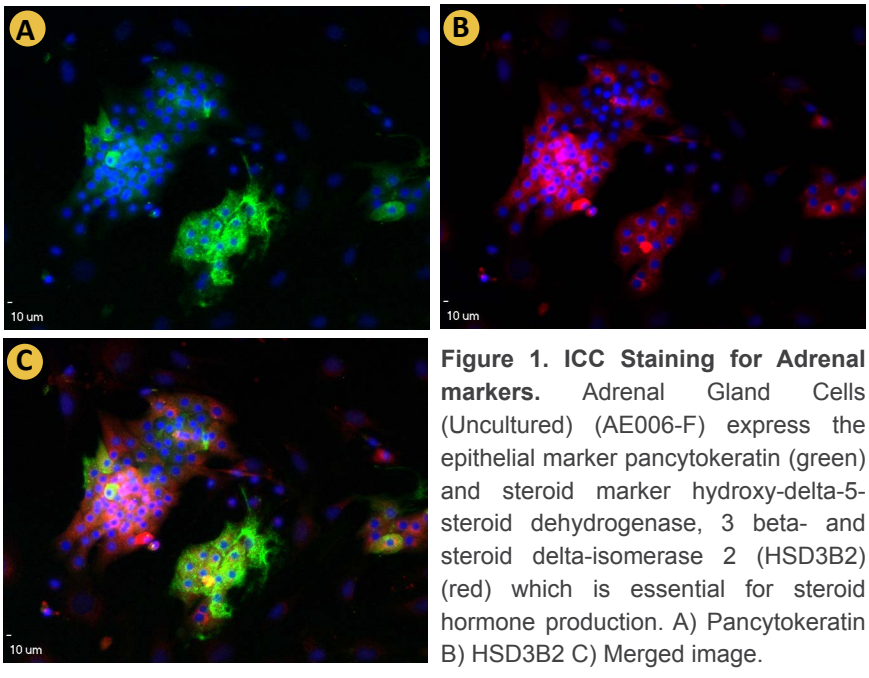


**Figure 1. ICC Staining for Adrenal markers.** Adrenal Gland Cells (Uncultured) (AE006-F) express the epithelial marker pancytokeratin (green) and steroid marker hydroxy-delta-5-steroid dehydrogenase, 3 beta- and steroid delta-isomerase 2 (HSD3B2) (red) which is essential for steroid hormone production. A) Pancytokeratin B) HSD3B2 C) Merged image.

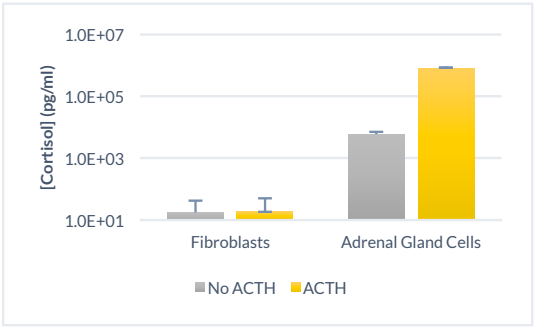


**Figure 2. ELISA Demonstrating AE006-F's Secretion of Cortisol.** The assay to detect cortisol secreted into the culture medium was performed on two cell types, Skin Fibroblasts (AI001-F) and Adrenal Gland Cells (AE006-F). The results show that Skin Fibroblasts do not secrete cortisol, whether or not they are treated with ACTH; and that cortisol secretion by Adrenal Gland Cells, at a basal level of 104 pg/ml, can be further stimulated (130-fold) by ACTH.

References

[1]Hoehn K, Marieb EN (2010). Human Anatomy & Physiology. San Francisco: Benjamin Cummings.

[2]Chyun YS, Kream BE, Raisz LG (1984). "Cortisol decreases bone formation by inhibiting periosteal cell proliferation". Endocrinology 114(2): 477–80.

[3]Xing Y et al. (2011). The Effects of Adrenalcorticotrophic Hormone on Steroid Metabolomic Profiles in Human Adrenal Cells. J Endocrinology 209(3): 327-335.

***Ways to Place an Order***

Phone 1.888.773.5959 | Fax 1.877.773.5959 | Email orders@dvbiologics.com

***Ordering Hours***

Monday through Friday: 9 am - 5 pm PST | Order anytime by email or fax.
*If your order arrives outside our normal business hours, it will be processed the next business day.