

Animal component free Human Hepatocyte Maintenance Medium

PRIMACYT has developed an animal-component free HHMM (Human Hepatocyte Maintenance Medium) which is a serum-free culture medium containing Hepatocyte Growth Factor and Epidermal Growth Factor that allows cultivation of differentiated human hepatocytes for several weeks. Hepatocyte specific functions like detoxification of ammonia (urea synthesis and release) and albumin synthesis are maintained for several weeks (Fig. 1). HHMM may be used for long-term cultivation of hepatocytes or in hepatocyte bioreactors and especially for biological/medical questions where the absence of animal components is absolutely necessary.

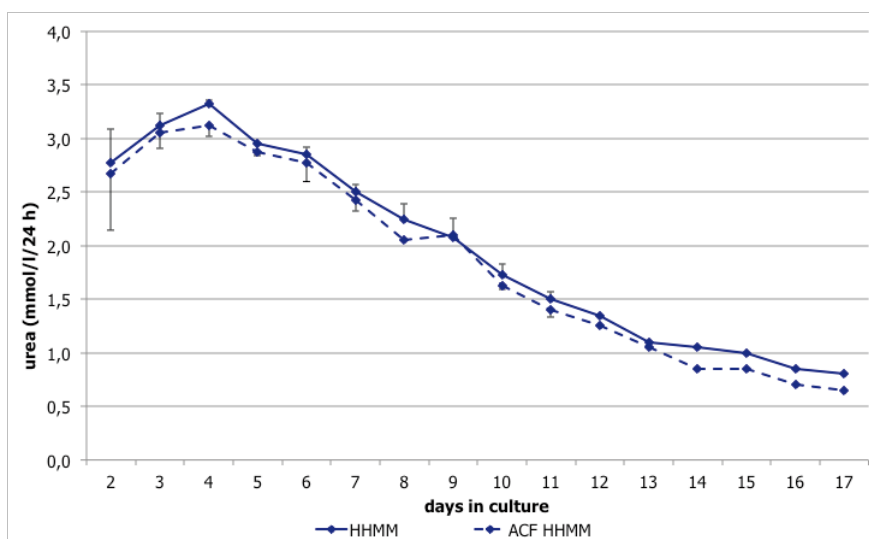


Fig. 1: Comparison of urea release in human hepatocytes cultured in HHMM or in ACF HHMM.

Human hepatocytes cultured in the already well described standard animal component containing Human Hepatocyte Maintenance Medium (HHMM) or in animal component free Human Hepatocyte Maintenance Medium (ACF HHMM) were treated alternately with two different compounds (C1 and C2). Compound 1 is known to reduce urea synthesis, while compound 2 leads to an increase in ammonia detoxification rate. The level of decrease/ increase of urea release is identical in both media (Fig. 2a and 2b). Under both culture conditions the human hepatocytes retain their ability to respond to the specific treatments in a similar way and even after more than two weeks in culture.

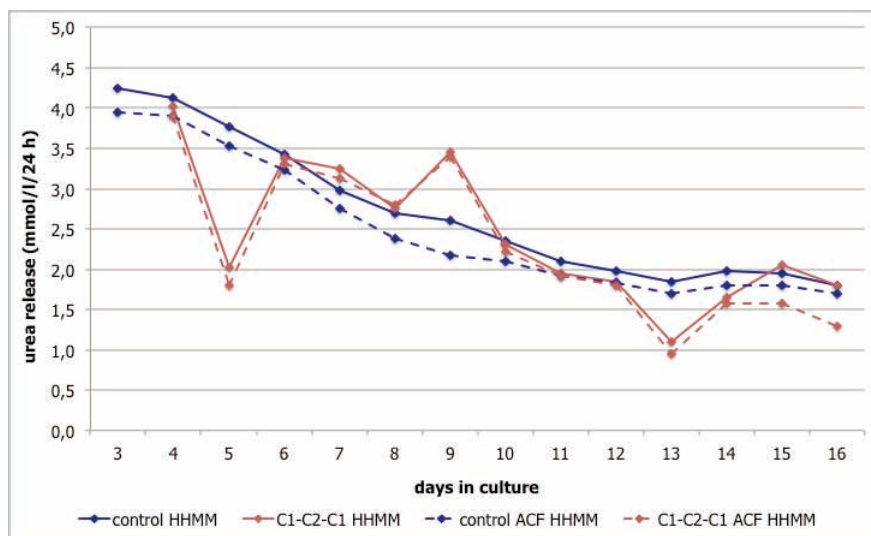


Fig. 2a: Comparison of urea release in human hepatocytes after alternate treatment for 24 h each with compound 1 (C1, day 4), compound 2 (C2, day 8) and compound 1 (day 12) cultured in HHMM or in ACF HHMM.

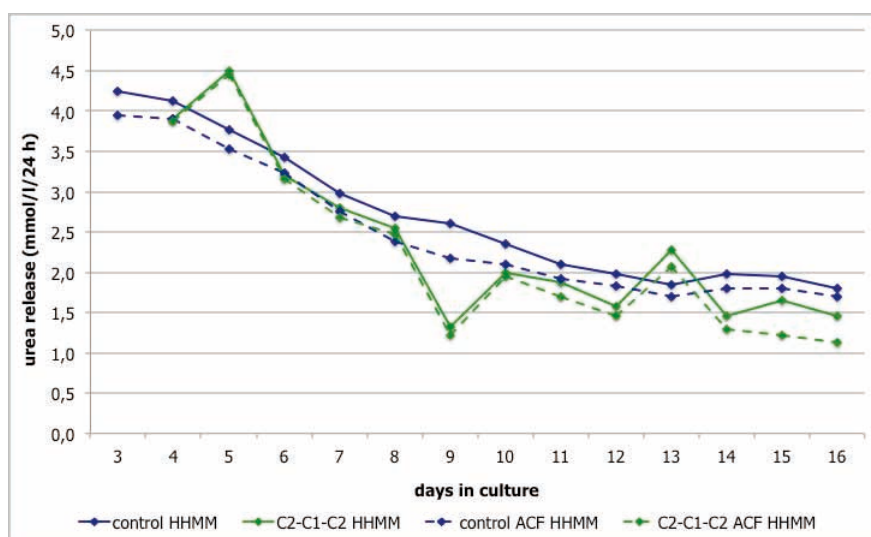


Fig. 2b: Comparison of urea release in human hepatocytes after alternate treatment for 24 h each with compound 2 (C2, day 4), compound 1 (C1, day 8) and compound 2 (day 12) cultured in HHMM or in ACF HHMM.

Related Products

ACF-HHMM-500	Animal component free Human Hepatocyte Maintenance Medium
HPM-500	Hepatocyte Plating Medium
CCP-xx	Collagen Coated Cell Culture Plates
HHS-01	Human Hepatocytes in Suspension
HHP-xx	Human Hepatocytes on Collagen Coated Plates (6-, 12-, 24- and 96-well)

Human Hepatocyte Maintenance Medium

PRIMACYT has developed HHMM (Human Hepatocyte Maintenance Medium). HHMM is a serum-free culture medium containing Hepatocyte Growth Factor and Epidermal Growth Factor that allows cultivation of differentiated human hepatocytes for several weeks. Hepatocyte specific functions like detoxification of ammonia and albumin synthesis are maintained for several weeks. Cytochrome P450 protein expression and enzymatic activity is maintained and/or remains inducible (Fig. 1 and 2). HHMM may be used for long-term cultivation of hepatocytes and in hepatocyte bioreactors.

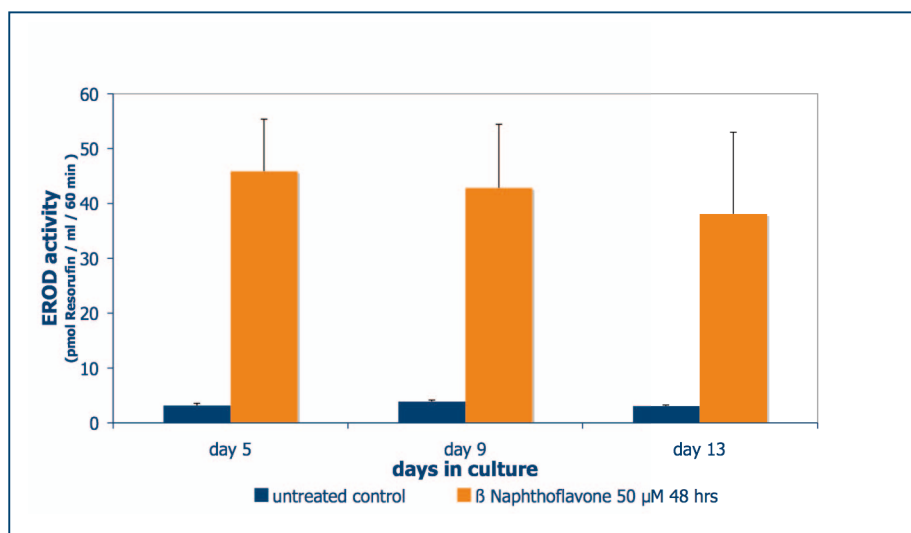


Fig. 1: Cytochrome P4501A2 associated Ethoxyresorufin-O-deethylase (EROD) activity can be induced by β-Naphthoflavone in human hepatocytes cultured with HHMM.

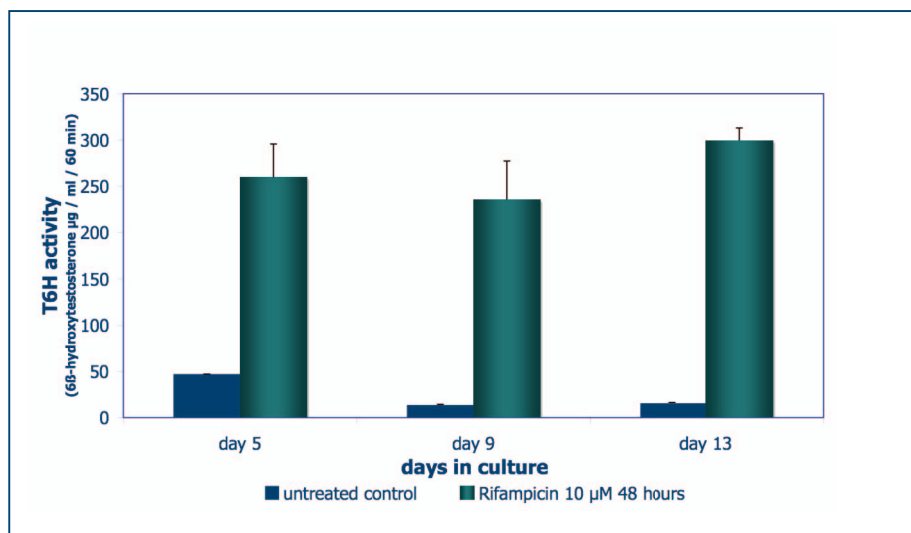


Fig. 2: Cytochrome P4503A4 associated Testosterone-6β-hydroxylase (T6H) activity can be induced by Rifampicin in human hepatocytes cultured with HHMM.