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## FILTER PAPER-BASED hTSH-IRMA: STABILITY OF hTSH IN DRIED BLOOD SPOTS

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A filter paper-based human thyrotropin (hTSH) immunoradiometric assay (IRMA) was set up for use in neonatal hypothyroid screening programs supported by IAEA's ARCAL VIII Project. Anti-hTSH antibodies were from NETRIA (London, U.K.). The pituitary hTSH reference preparation was extracted in our laboratory and diluted from 10 to 120 µIU/mℓ in 55% hematocrit TSH-free blood, dropped on SS #903 filter paper, dried, and stored at -30º C in sealed plastic bags with diseccant packages.

The stability of these standards was evaluated through an accelerated degradation test, storing them near to the temperatures to which they might be exposed during transport or in places with poor infrastructure: 7,24 and 40º C. For comparison, serum TSH in 55% hematocrit blood (10,60 and 100 µIU/mℓ) was dried on filter paper and stored like the standards.

At 40º C the pituitary hTSH had a linear potency decrease, with 66% activity remaining after 8 weeks; serum hTSH started to loose activity only after 4 weeks, showing a 25% loss after 8 weeks. At 24º C, the pituitary hTSH activity was stable until 4 weeks, thereafter loosing 23% potency until the 12th week; serum hTSH had a 30% potency loss in the same period. At 7º C, pituitary and serum hTSH were perfectly stable for up to 13 weeks; longer storage periods are being studied.

In order to avoid temperature degradation, both pituitary and serum hTSH dried on filter paper should not be exposed to more than 24º C and mailing times should be kept within 4 weeks. Where freezing is not available, it is possible to store the dried blood spots in a refrigerator for at least 3 months.

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