α – L – Fucosidase Tumour marker

Colorimetric Method **25 Tests**

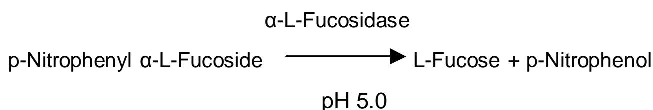
INTRODUCTION :

Serum α – L –Fucopyranosidase (AFU)activity is considered a useful marker of hepatocellular carcinoma (HCC). Increased AFU levels in serum are an early indication of HCC. AFU is a lysosomal enzyme involved in the degradation of a diverse group of naturally-occuring fucoglycoconjugate. Measurement of serum fetoprotein (AFP) is a common parctice for early detection of HCC but AFP assay alone suffers from its low specificity and senstivity due to the fact that not all HCC secrete AFP. AFP levels may be normal in as many as 40% of patients with early HCC and 15-20% patients with advanced HCC. Recent studies clearly demonstrated that measurements of both AFP and AFU can significantly increase the detection specificity and senstivity for HCC. AFU is reported to be a more sensitive marker especially for detecting a small tumor size of HCC. Measurement of AFU is made by an enzymatic cleavage of the synthetic substrate 4-nitrophenyl-a-L-fucopyranoside to a-L-fucoside and 4-nitrophenol which is quantified by measuring the absorbance at 405 nm . One unit of AFU is defined as the amount of AFU that cleaves one μ mole of 4-nitrophenyl-a-L-fucoside per min at 37ºC.

PRINCIPLE :

The AFU assay is based on the enzymatic cleavage of the synthetic substrate p-nitro phenyl α – L – Fucopyranoside to p-nitrophenol and L- fucose.

The yellow color of p-nitrophenol in an alkaline medium can be measured quantitatively at 405 nm.



SAMPLE

Serum. Haemolysis will interfere.

REAGENTS :

1.	**Acetate Buffer pH 5 /** **Substrate** P-Nitrophenyl α-L-fucopyranoside	50 mmol /L 1 mmol / L
2.	**Alkaline reagent pH 10**	200 mmol / L

STABILITY :

The reagents are stable up to the expiry date specified when stored at :

R1 at -20 °C.

R2 at +4 °C.

PROCEDURE :

	Sample (mL)	Blank (mL)
Sample	**0.05**	**-**
Buffer/ Substrate (R1)	**0.2**	**0.2**
Mix, Incubate at 37˚C for exactly 60 minutes then add:		
Alkaline Reagent (R2)	**1.0**	**1.0**
Mix well, then add:		
Sample	**-**	**0.05**

Mix well. Read the absorbance of the sample (A_{Sample}) against sample blank at 405 nm using cuvette 1 cm Light path. Color stable for few hours. Linearity up to 200 U/L.

CALCULATION :

Enzyme Activity (U/L) = A_{Sample} x 23.5

REFERENCE :

Zielke, K., Okada, S. and O'Brien, J., J. Lab. Clin. Med. 79. 164, 1972.

Deugnier Y, Hepatol., 4, 889, 1984.

Bukofzer, S. Br. J. Cancer, 59 417, 1989.

El-Houseini, M. E., et al, Cancer Control, 12, 248, 2005.

BIODIAGNOSTIC
DIAGNOSTIC AND RESEARCH REAGENTS

α – L – FUCOSIDASE ASSAY
Tumour marker

Colorimetric Method

R1 -20 ºC
R2 +4 ºC

25 Tests

CAT. NO. FU 25 36

FOR RESEARCH USE ONLY

REAGENTS

R1	Buffer- Substrate	10 ml
R2	Alkaline Reagent	50 ml

CONTACTS

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