

## **CD 99**

By

Dr RG. Wiseman Pinto

Professor of Pathology

Former HOD

Former Dean Goa University

President Asian Society of Cytopathology

CD 99

also called

MIC 2

Xg Blood Group

T Cell surface Glycoprotein

Transmembrane protein

Transmembrane Antigen

Cell surface protein

Cell surface Antigen

Types

CD 99 Type I

CD 99 Type II

CD 99

was the 99th Protein identified in the Cluster Differentiation  
(Designation )

### **Functions of CD 99**

1 Apoptosis of T Cells

Induced by Caspase independent pathway

2 migration of leucocytes

3 differentiation of primitive Neuroectodermal cells

4 oncogenic

Ewings Sarcoma/ PNET

5 tumor suppressor gene in Osteosarcoma

### **CD 99 Positive Tumors**

1 Ewings Sarcoma/ PNET

2 Lymphoblastic lymphoma/ leukemia

3 Synovial Sarcoma

4 low grade fibromyxoid Sarcoma

5 meningioma

6 some myeloid leukemia

7 Malignant Gliomas

8 Pancreatic endocrine Tumors

- 9 various other Sarcomas
- 10 B Cell Lymphoma/leukemia
- 11 subtypes of Malignant Melanoma

### **CD 99 Positive in Normal cells**

Endothelial cells  
Ependymal cells  
Hepatocytes  
Gastric foveolar ep  
Ovarian granulosa cells  
Pancreatic islet cells  
Testicular sertoli cells  
[03/07/25, 9:41:40 AM] Pinto RJW Prof: Immature thymic T Cells  
Activated B.lymphocytes

### Uses of CD 99

- 1 Ewings Sarcoms / PNET
- 2 T Cell Lymphoma/ Leukemia
- 3 to diff meningeal henangiopericytoma ( now called Solitary Fibrous tumor ) which is CD 99 Positive from Anaplastic Meningioma which is CD 99 negative
- 4 to detect MRD (Minimal Residual Disease ) By Flow cytometry in T ALL which is CD 99 Positive
- 5 Therapeutics value Anti CD 99 Antibodies in personalised medicine

### **Interpretation**

Staining must be strong , Diffuse and membranous

Ewings Sarcoma  
ALL Lymphoma  
Other lymphomas / Leukemias  
Round Cell Saroma  
Spindle cell Sarcoma  
Grade and subtype ependymoma  
Mediastinal and other biopsies to detect thymic epithelial neoplasms

### CD 99 Positive

- 1 highly Aggressive
- 2 metastasis

CD. 99 is not specific

CD 99 is useful Small blue round Cell Tumors

For Ewings Sarcoma  
CD 99 Positive and  
NKX 2.2 is specific

Also

Translocation 11/ 22

EWSR1 with FL1 fusion

In 85 %

and EWSR 1 with ERG fusion

Pinto RJW Prof: Dr. RG. Wiseman Pinto

Goa India