Biomarkers in tumor diagnostics

Tumor markers represent a subset of biomarkers that are indicative for cancerous growth. Most of these markers are being produced by both normal cells as well as tumor cells. The levels at which they are present in bodily fluids like urine, saliva or blood are however typically significantly higher in patients with various malignancies. There is a plethora of tumor markers being used which can be classified based on their function, the way they are detected, or the kind of sample in which they are measured:

- Oncotel antigens (OA)
- Tumor associated antigens (TA)
- Hormones and hormone receptors (HR)
- Enzymes and isoenzymes (EM)
- Serum and tissue proteins (ST)
- Cancer stem cells (CS)
- other tumor markers such as genetic markers and biomolecules.

A perfect tumor marker is highly specific and differentiates reliably between healthy individuals and cancer patients. It can be a universal tumor marker or specific for one particular malignancy. It should be allowed early detection of early stage tumors and at the same time distinguish tumor stages and have prognostic value for outcome and potential recurrence. Lastly, it should be easily measurable with established techniques to follow any changes during the course of a treatment.

(2) http://www.cancer.gov/research/clinicaltrials/novelmarker/diagnostic/tumor-markers-fast-chart
(3) http://www.cancer.gov/research/clinicaltrials/novelmarker/diagnostic/tumor-markers-fast-chart