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Gene Expression Signatures – *Ex Vivo / In Vitro* Approaches for Signature Development and Validation

P.K. Suresh[1], K. Ranganathan[2], S. Balasundaram[3] and R. Gunaseelan[1, 4]

1. Chennai Dental Research Foundation, No.56, Radhakrishnan Salai, Mylapore, Chennai 600 004, Tamil Nadu, India
Telephone: +91 44 4210 3440, Fax: +91 44 28472410, E-mail: p_k_suresh@rediffmail.com
2. Department of Oral and Maxillo-Facial Pathology, RAGAS, Dental College and Hospital, 2/102, East Coast Road, Uthandi, Chennai 600 119, Tamil Nadu, India
Telephone: +91-44 -24491736, Fax: +91-44-24493718, E-mail: ran2@vsnl.com
3. Chennai Dental Research Foundation, No.56, Radhakrishnan Salai, Mylapore, Chennai 600 004 and RAGAS Dental College and Hospital, 2/102, East Coast Road, Uthandi, Chennai 600 119, Tamil Nadu, India
Telephone: +91 44 4210 3440, Fax: +91 44 28472410, E-mail: bbaallaa2002@yahoo.co.in
4. Telephone: +91-44-42103440, Fax: +91-44-28472410, E-mail: gunaraga@md2.vsnl.net.in

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ABSTRACT Tumor heterogeneity has warranted the development and validation of gene expression signatures. This approach will help the oncologist in improving diagnosis and/or prognosis. Chronic Inflammation is considered to be involved in neoplasia and commonalities have been observed, in the wound healing response as well as in tumorigenesis. In this regard, the serum response of fibroblasts was shown to mimic the *in vivo* wound healing response in terms of the "wound response signature" using a variety of molecular biological approaches. Correlation of such signatures, using samples obtained by *ex vivo* and *in vitro* methods, developed and/or validated by a variety of genomic, transcriptomic and proteomic approaches with the clinical outcome, will enable the researcher and the oncologist/clinician to interface and potentially develop and validate cost-effective methods of diagnosis potentially leading up to personalized therapy. Patient selection and stratification and sample size considerations are paramount in developing and validation of improved genomic classifiers.