DR. CHELLIAH SELVAM (Orcid ID : 0000-0003-1394-9349)

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Synthesis, evaluation of cytotoxic properties of promising curcumin analogues and investigation of possible molecular mechanisms

Brian C Jordan[a], Bhavna Kumar[b], Ramasamy Thilagavathi[c], Arti Yadhav[b], Pawan Kumar[b] and Chelliah Selvam[a]*

[a]Department of Pharmaceutical Sciences, College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX 77004, USA

[b] Department of Otolaryngology-Head and Neck Surgery; The Ohio State University Wexner Medical Center, Columbus, OH, USA

[c]Department of Biotechnology, Faculty of Engineering, Karpagam University, Coimbatore, India

Address correspondence to Chelliah Selvam, Department of Pharmaceutical Sciences, College of Pharmacy and Health Sciences, Texas Southern University, Houston, TX-77004, USA. E-mail: chelliahs@tsu.edu

Curcumin is a popular, plant-derived compound that has been extensively investigated for diverse range of biological activities. Anti-cancer activity against various types of cancers and high safety profile associated with curcumin makes it very attractive. In this study, we report the synthesis and evaluation of pyrazole and click chemistry curcumin analogues for Head and Neck cancer. MTT assay against head and neck cancer cell lines CAL27 and UM-SCC-74A revealed the micromolar potency of the synthesized compounds. To determine the possible molecular mechanisms, effect of these analogues in the expression of pSTAT3, pFAK, pERK1/2 and pAKT was studied. Interestingly, compounds **2** and **5** significantly inhibited the pSTAT3 (Tyr 705) phosphorylation. As far as other compounds, they showed

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