



In Vitro Evaluation of Abiraterone Acetate as a Suitable Candidate against Colon Cancer

Kiran SULEMAN¹, Rashid RASHEED², Saba RANI¹, Zanib KHAN³, Ayesha TARIQ¹,
Adeel SIDDIQUI⁴, Arshad M. KHAN¹, Ghulam MURTAZA^{5*} & Xianju HUANG^{6*}

¹ Government Post-Graduate College of Mandian, Abbottabad, Pakistan

² Department of Chemistry, Government College University, Faisalabad 38000, Pakistan

³ Department of Biosciences, COMSATS University Islamabad, Islamabad Campus, Pakistan

⁴ Department of Pharmacy, Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan

⁵ Department of Pharmacy, COMSATS University Islamabad, Lahore Campus 54000, Pakistan

⁶ College of Pharmacy, South-Central University for Nationalities, Wuhan 430074, China

SUMMARY. Abiraterone acetate (AA) is used for the treatment of metastatic castration-resistant prostate cancer, however, its role and efficacy has not been validated in colon cancer. This study was carried out to examine the ability of AA to evaluate apoptosis in colon cancer cells. The colon tumor growth inhibition ability of AA was estimated *in vitro* by trypan blue dye exclusion assay. The cell death may be evident from morphological alterations upon visual examination, discriminating between viable and non-viable cell. The effect of AA on colon cancer cell lines was pronounced up to 67% at 300 μ L but at 50 μ L susceptibility to test drug was noted in only 59% of tumor cells.

RESUMEN. El acetato de abiraterona (AA) se usa para el tratamiento del cáncer de próstata metastásico resistente a la castración; sin embargo, su papel y eficacia no han sido validados en el cáncer de colon. Este estudio se llevó a cabo para examinar la capacidad de AA para evaluar la apoptosis en células de cáncer de colon. La capacidad de inhibición del crecimiento del tumor de colon de AA se estimó *in vitro* mediante el ensayo de exclusión del colorante azul tripán. La muerte celular puede evidenciarse a partir de alteraciones morfológicas en el examen visual, discriminando entre células viables y no viables. El efecto AA en las líneas celulares de cáncer de colon se pronunció hasta un 67% a 300 μ L, pero a un nivel de sensibilidad de 50 μ L para el fármaco de prueba solo se observó en el 59% de las células tumorales.

KEY WORDS: abiraterone acetate, apoptosis, clinical trial, colon cancer, prostate cancer, trypan blue dye exclusion assay.

* Authors to whom correspondence should be addressed. E-mail: gmdogar356@gmail.com (Ghulam Murtaza); xianju@mail.scuec.edu.cn (Xianju Huang).