Pimonidazole binding and oxygen regulated protein expression

The current state of affairs with respect to correlations between pimonidazole binding and the expression of endogenous, hypoxia inducible proteins is summarized in the table. Areas of spatial co-localization are often seen but overall correlations, while in some cases statistically significant, are generally weak for squamous cell carcinomas. The strongest correlations occur in carcinomas derived from simple epithelia (e.g., bladder and breast) indicating, perhaps, that a difference in biology exists between these tumors and squamous cell carcinomas.

Pimonidazole binding and endogenous "hypoxia marker" protein expression.

Endogenous Marker	Correlation with pimonidazole	Cancer Site	Ref.
Carbonic anhydrase IX	No correlation	Liver mets; colorectal Ca	(3)
	No correlation	Cervix SCC	(4)
	No correlation	Colon AdenoCa	(5)
	0.27 ($p<0.001$)	Cervix SCC	(6)
	0.36 ($p=0.02$)	H&N SCC	(7)
	0.6	Cervix SCC	(8)
	0.74 ($p<0.0001$)	Bladder Ca	(9)
	0.75	Cervix SCC	(10)
EGFR	No correlation	Colon AdenoCa	(5)
EPO	0.6	Breast Ca	(11, 12)
	0.74 ($p=0.001$)	H&N SCC	(13)
EPOR	No correlation	H&N SCC	(13, 14)
	0.63 ($p=0.0001$)	Breast Ca	(12)
Glut-1	No correlation	Liver mets; colorectal Ca	(3)
	0.45 ($p=0.003$)	Cervix SCC	(4)
	0.82 ($p=0.0001$)	Bladder Ca	(9, 15)
HIF-1a	0.24 ($p=0.51$)	H&N SCC	(16, 17)
	0.34 ($p=0.04$)	Cervix SCC	(6)
Involucrin	No correlation	Cervix and H&N SCC	(18-20)
Metallothionein	No correlation	Cervix and H&N SCC	(18)
Thymidine phosphorylase	No correlation	Cervix SCC	(21)
VEGF	No correlation	Cervix and H&N SCC	(1, 22)
	No correlation	Colon AdenoCa	(5)

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