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MESTRADO EM CIÊNCIAS AMBIENTAIS E SAÚDE

Null polymorphism of *GSTM1* gene in susceptibility of Breast Cancer: Evidence based on Meta-analysis

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GBCS GOIANIA BREAST CANCER SYMPOSIUM 2015

O maior evento de pesquisa em Câncer de Mama do Brasil

The greatest event in research of breast cancer in Brazil

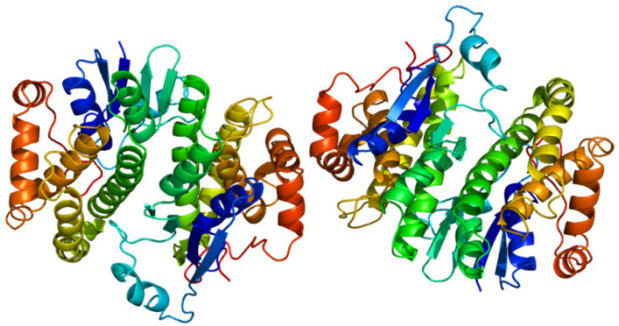
INTRODUCTION

Characteristic of GST

- Intracellular enzyme

Enzyme function

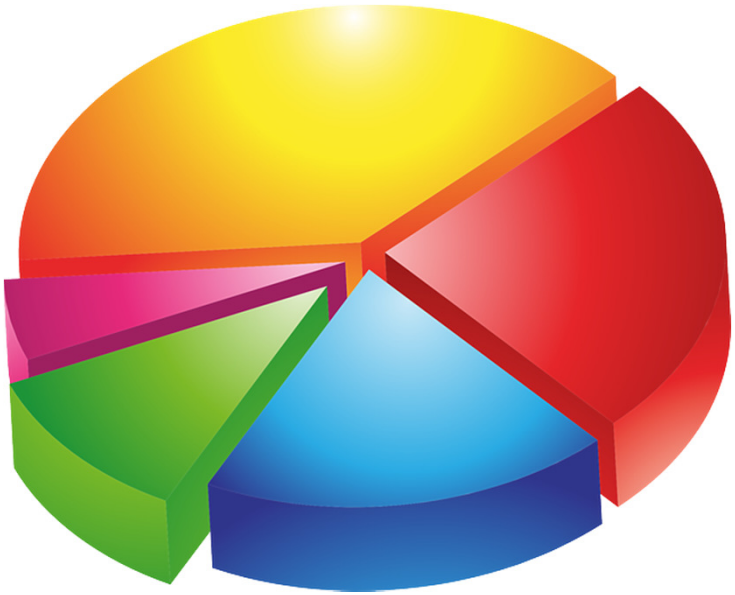
- Prevents the action of toxins



Glutationa S-transferase

METHODOLOGY

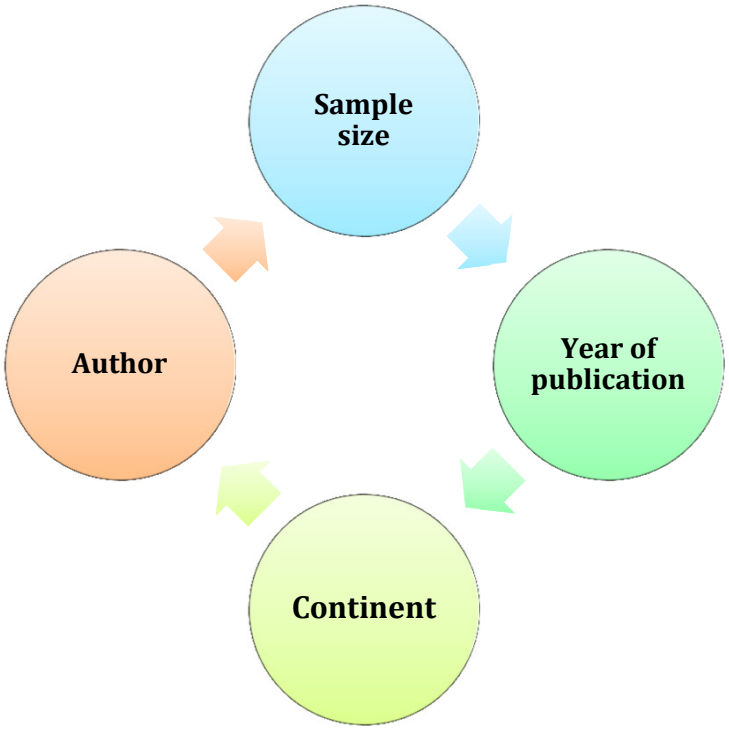
- Type of Study
  - ✓ Meta-analysis
- Study Period
  - ✓ 1995-2013
- Data base
  - ✓ PubMed and SciELO
- Data analysis
  - ✓ Software BioEstat® 5.0



RESULTS AND DISCUSSION

A total of 10 studies were selected

The database was built considering:



N	Author	Year	Local	Case					Control					OR	IC 95%	
				GSTM1(+)		GSTM1(-)		Total	GSTM1(+)		GSTM1(-)		Total			
				N	f(%)	N	f(%)		n	f(%)	n	f(%)			Inf.	Supl.
1	Ambrosone et al.	1995	EUA	84	47,5	93	52,5	177	115	49,6	117	50,4	232	0,919	0,621	1,359
2	Bailey et al.	1998	EUA	112	50,2	111	49,8	223	97	43,9	124	56,1	221	1,290	0,888	1,874
3	Ambrosone et al.	1999	EUA	53	50,5	52	49,5	105	52	48,6	55	51,4	107	1,078	0,629	1,847
4	García-Closas et al.	1999	EUA	233	50,1	232	49,9	465	237	51,1	227	48,9	464	0,962	0,744	1,244
5	Charrier et al.	1999	França	160	44,3	201	55,7	361	213	48,7	224	51,3	437	0,837	0,633	1,107
6	Millikan et al.	2000	EUA	197	74,9	66	25,1	263	187	72,2	72	27,8	259	1,149	0,779	1,696
7	Gudmundsdottir et al.	2001	Islândia	227	45,4	273	54,6	500	181	45,8	214	54,2	395	0,983	0,754	1,281
8	Mitrunen et al.	2001	Itália	260	54,1	221	45,9	481	278	58,2	200	41,8	478	0,846	0,656	1,093
9	Egan et al.	2004	China	497	43,8	638	56,2	1135	523	43,4	683	56,6	1206	1,017	0,864	1,198
10	Possuelo et al.	2013	Brasil	20	40,8	29	59,2	49	31	63,3	18	36,7	49	0,400	0,178	0,903
Combined				**1843**	**49,0**	**1916**	**51,0**	**3759**	**1914**	**49,7**	**1934**	**50,3**	**3848**	**0,967**	**0,883**	**1,060**

RESULTS AND DISCUSSION

Combined total: 7,607

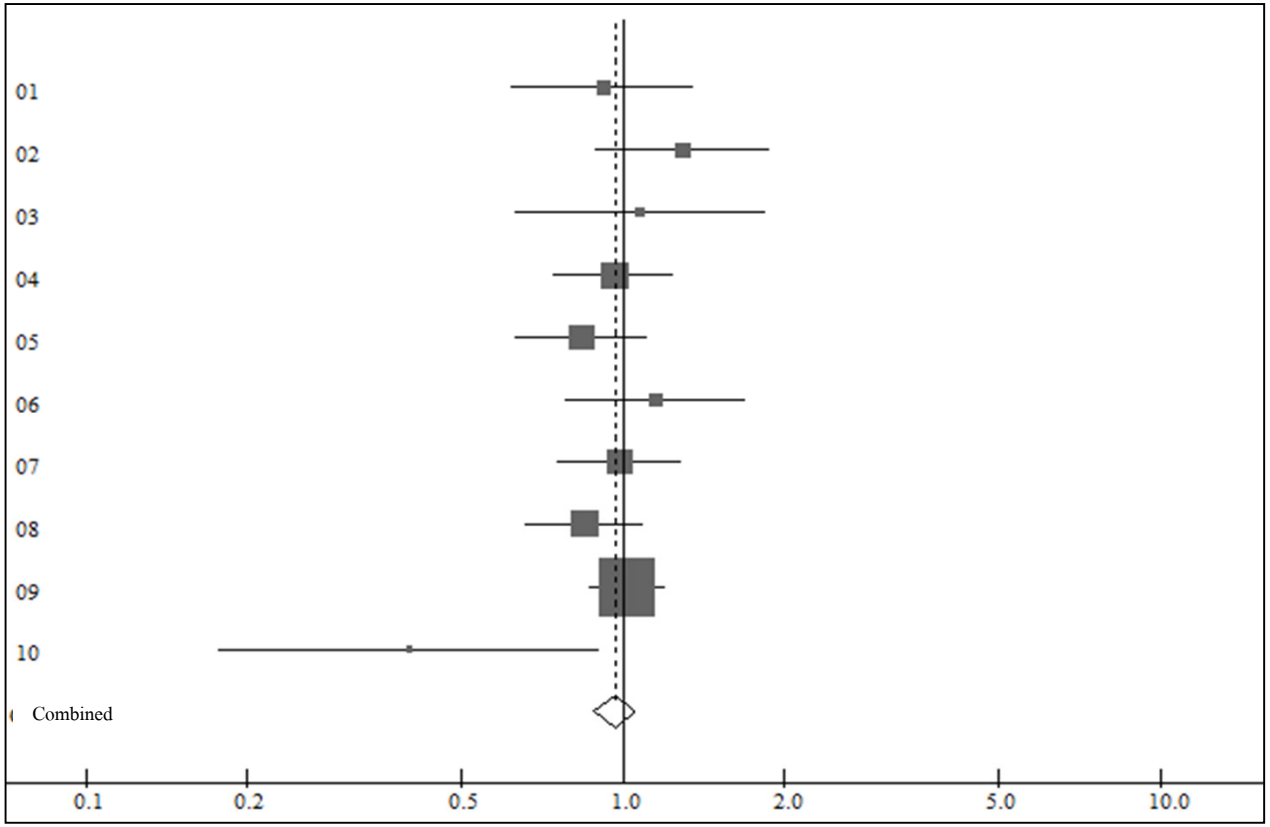
- 3,759 cases and 3,848 controls

Frequencies

- GSTM1 present and null: 49.0% and 51.0% group cases
- GSTM1 present and null: 49.7% and 50.3% control group

RESULTS AND DISCUSSION

Figure 1. Forest plot graph showing all the studies and in the last line, the combined, represented by the diamond.



OR (*odds ratios*)=0,967 < 1
IC(95%)=0,883-1,060
p=0,4896 (>0,05)

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RESULTS AND DISCUSSION

Correlation of *GSTM1* null and breast cancer;

Positively associated factors:

- menarche
- first pregnancy
- kinship
- Smoking status

CONCLUSION

- The studied gene showed no significance
- Identification of more polymorphisms
- Conduction of larger studies.

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Thank You!
Obrigada!