

乳癌相關荷爾蒙

- Estrogen 和 progesterone 在乳癌手術前後差異。

乳癌手術

-MRI 偵測活體脂肪組織溫度以協助乳癌手術

Letrozole 及其生合成

-抗乳癌藥物

●Effects of estradiol and medroxyprogesterone acetate on expression of the cell cycle proteins cyclin D1, p21 and p27 in cultured human breast tissues

By: Eigeliene, Natalija; Harkonen, Pirkko; Erkkola, Risto

Source: Cell Cycle, Volume: 7, Issue: 1, Pages: 71-80, Journal, 2008, CODEN: CCEYAS, ISSN: 1538-4101, DOI: 10.4161/cc.7.1.5102

Company/Organization: Department of Obstetrics and Gynecology, Turku University Central Hospital, Turku, Finland

Accession Number: 2008:346479, CAN 148:441256, CAPLUS

Publisher: Landes Bioscience

Language: English

Abstract

Estrogen and progesterone are key regulators of normal breast epithelial cell proliferation and differentiation. They are also involved in the initiation and progression of breast tumorigenesis.

Several exptl. studies have demonstrated that steroid hormones affect cell cycle proteins assocd. with tumor initiation and progression. Hormone replacement therapy (HT) is widely used to alleviate climacteric symptoms among postmenopausal women. Little is known, however, about cell cycle protein regulation during hormonal treatment of human breast tissue (HBT). In this study the authors aimed to evaluate the effects of estradiol (E2) and medroxyprogesterone acetate (MPA) on cultured HBTs representing samples from redn. mammoplasty of premenopausal (pre-HBT) and postmenopausal (postm-HBT) women, and from peritumoral tissue (peritum-HBT) after breast tumor surgery among postmenopausal patients. Explants of HBT were cultured for 14 days in medium supplemented with E2, MPA or E2 + MPA. Expression of cyclin D1, p21 and p27 was assessed by immunohistochem. staining of explants cultured for 2 and 14 days. Further, Ki-67 staining was performed to evaluate correlation between proliferation and cell cycle regulatory protein expression. The authors' results showed that HBTs studied were pos. for ER α , ER β and PR ($\geq 10\%$ of the cells stained). The level of p21 was lower in pre-HBT than in postm-HBT, whereas p27 levels were higher in pre-HBT than in postm- and peritum-HBT. The level of Ki67 pos. cells was higher in pre-HBT than in post-HBT. Interestingly, the level of p21-pos. cells showed an opposite pattern. Treatment with E2 increased the relative no. of cyclin D1-staining cells and decreased that of p27-staining cells in postm-HBT, but not in pre-HBT. All hormone regimens (E2, MPA, E2 +

MPA) increased the no. of p21-pos. cells in postm-HBTs at 14 days and E2 even at 2 days. In pre-HBT p21 staining was increased in explants cultured with E2 for 14 days but no response was obsd. in cyclin D1 and p27. The no. of cyclin D1-staining cells was clearly higher in peritum-HBT than in non-tumorous pre- or postm-HBT, but the response of cyclin D1 to all hormonal treatments in peritum-HBT was the same as in postm-HBT. Moreover, the authors found that E2, MPA, E2 + MPA in vitro increased nos. of Ki-67-pos.cells in post-HBTs at 14 days and E2 also in pre-HBT. The stimulated proliferation rate was assocd. with an increase of cyclin D1- and p21-pos. cells and a decrease in the nos. of p27, esp. in post-HBTs. Taken together, the authors' results suggest that cell cycle regulatory proteins are more sensitive to exogenous hormone treatment in postm-HBT than in pre-HBT.

●Temperature monitoring in fat with MRI

By : Hynynen K; McDannold N; Mulkern R V; Jolesz F A

Source: Magnetic resonance in medicine : official journal of the Society of Magnetic Resonance in Medicine / Society of Magnetic Resonance in

Medicine, Volume: 43, Issue: 6, Pages: 901-4, (COMPARATIVE STUDY); Journal; Article; (JOURNAL ARTICLE); (RESEARCH SUPPORT, NON-U.S.

GOV'T); (RESEARCH SUPPORT, U.S. GOV'T, P.H.S.), 2000, ISSN: 0740-3194, Journal Code: 8505245, United States

Company/Organization: Department of Radiology, Division of MRI, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts 02115, USA

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Accession Number: 2000321501, PubMed ID: 10861887, MEDLINE

Language: English

Abstract

The aim of the study was to test the hypothesis that fast spin echo T(1)-weighted images can be used to quantify the temperature in fat during thermal therapy in vivo. An MR compatible positioning device was used to manipulate focused ultrasound transducers in an MRI scanner. This system was used to sonicate fat tissue around the kidneys of 12 rabbits at various power levels for 10 to 20 sec. The scan parameters of T(1)-weighted fast spin echo (FSE) sequence were varied to optimize signal intensity characteristics while maintaining short scan times. An invasive optical probe was used to calibrate the temperature related signal intensity changes. For the T(1)-weighted FSE sequence, the signal intensity decreased with the temperature elevation at the rate of $0.97 \pm 0.02\%$ / degrees C. The single focused transducer produced a contrast-to-noise ratio more than 10 at power levels below the tissue damage threshold. The signal intensity was linearly dependent on the power, despite the measured temperatures being well above the coagulation threshold.

This study demonstrates that T(1)-weighted FSE MRI sequences can be used to quantify the temperature elevation in fat in vivo during short focused ultrasound exposures. This can be very important for breast tumor surgery, fat ablation, and for treating deep seated tumors through superficial fat layers. Magn Reson Med 43:901-904, 2000.

● Invasive lobular carcinoma: response to neoadjuvant letrozole therapy

By: Dixon, J. Michael; Renshaw, Lorna; Dixon, Jonathan; Thomas, Jeremy

Source: Breast Cancer Research and Treatment, Volume: 130, Issue: 3, Pages: 871-877, Journal; Online Computer File, 2011, CODEN: BCTRD6,

ISSN: 0167-6806, DOI: 10.1007/s10549-011-1735-4

Company/Organization: Breakthrough Research Unit, Edinburgh Breast Unit, Western General Hospital, Edinburgh, UK, EH4 2XU

Accession Number: 2011:1510752, CAPLUS

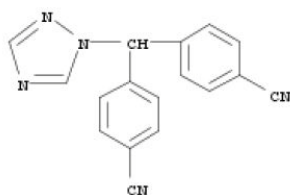
Publisher: Springer

Language: English

Abstract

Invasive lobular cancer (ILC) responds poorly to neoadjuvant chemotherapy but appears to respond well to endocrine therapy. We examd. the effectiveness of neoadjuvant letrozole in postmenopausal women (PMW) with estrogen receptor (ER)-rich ILC. PMW were considered for treatment with neoadjuvant letrozole if they had ER-rich, large operable, or locally advanced cancers, or were unfit for surgical therapy. Tumor vol. was estd. at diagnosis and at 3 mo using calipers (clin.), ultrasound, and mammog. At 3 mo, if phys. fit, women were assessed for surgery. Responsive women with cancers too large for breast-conserving surgery continued with letrozole. Patients had surgery or were switched to alternative therapy if tumor vol. was increasing. Sixty-one patients (mean age, 76.2 years) with 63 ILCs were treated with letrozole for ≥ 3 mo. The mean redn. in tumor vol. at 3 mo was 66% (median, 76%) measured clin., 61% (median, 73%) measured by ultrasound, and 54% (median, 60%) measured by mammog. Surgery was possible at 3 mo in 24 cancers in 24 patients, and all but two of the remaining patients continued with letrozole therapy for a median duration of 9 mo. At the time of this publication, 40 patients with a total of 41 cancers have undergone surgery. The rate of successful breast conservation was 81% (25/31). Twenty-one patients have continued with letrozole monotherapy, and 19 remain controlled on letrozole at a median of 2.8 years. There is a high rate of response to letrozole in PMW with ER-rich ILC.

112809-51-5



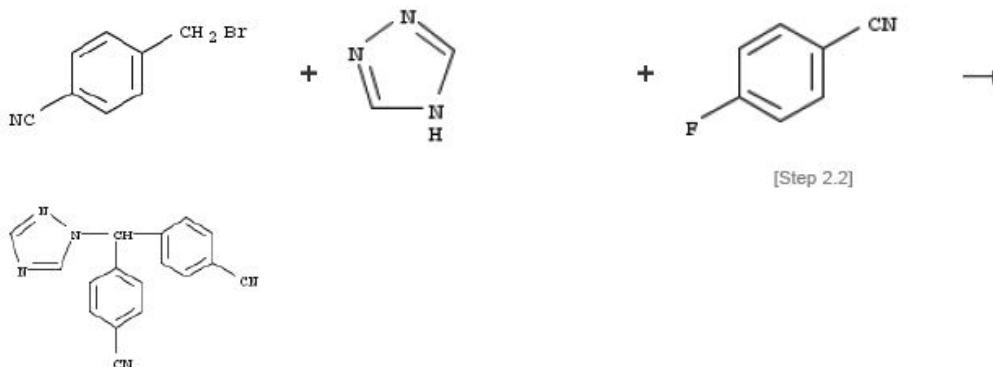
C₁₇ H₁₁ N₅

Benzonitrile, 4,4'-(1H-1,2,4-triazol-1-ylmethylene)bis-

SciFinder®

Page 1

1. 2 Steps



[Overview](#)

Steps/Stages

- 1.1 R:K₂CO₃, C:KI, S:Me₂CO, 12 h, reflux
- 2.1 R:t-BuOK, S:DMF, 1 h, -5°C
- 2.2 30 min, -5°C; 1 h, -5°C
- 2.3 R:HCl, S:H₂O, pH 5

Notes

regioselective, Reactants: 3, Reagents: 3, Catalysts: 1, Solvents: 3, Steps: 2, Stages: 4, Most stages in any one step: 3

References

Synthesis and structure-activity relationship of 1- and 2-substituted-1,2,3-triazole tetrazole-based analogues as aromatase inhibitors

By Doiron, Jeremie et al

From European Journal of Medicinal Chemistry, 46(9), 4010-4024; 2011

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