Acceptance Speech of
PROFESSOR FERNAND LABRIE
Co-Winner of the 2007
King Faisal International Prize for Medicine

Monday 16 April 2007 (28.3.1428H)

Your Royal Highness, Prince Sultan Ibn Abd Al Aziz
Crown Prince, Deputy Premier,
Minister of Defense and Aviation and Inspector General
Your Highnesses

Your Excellencies
Distinguished Guests

It is a unique honour to receive the King Faisal International Prize in Medicine, which strongly emphasizes the traditions of Arabic and Islamic philanthropy. It is indeed a great privilege to be associated to the list of personalities of such high reputation who received the King Faisal International Prize since the establishment of the Foundation in the honour of King Faisal in 1976. I am especially proud to be associated with the 2007 winners having such exceptional international reputation.

The award of the King Faisal International Prize is not only an honour for me but it is also a major recognition and source of motivation for all my colleagues and collaborators who have been in hundreds over the years. It is also with great pride that I receive this prize that enlightens the reputation of my University, Laval University, as well as my city of residence, Quebec City, the oldest and most European city in North America.

During all my education at the Petit Séminaire de Québec, at the Faculty of Medicine at Laval University, during my postdoctoral studies in Cambridge, England, my objective and passion have always been to search, as intensively as possible, for new knowledge in medicine, especially in physiology, biochemistry, molecular biology and genomics, and to apply such knowledge to improving the treatment of diseases, cancer being my main target. My preference has always been for the quantitative aspects of medicine, a choice which led me to endocrinology or the science of hormones where we can measure with precision the level of hormones. On most occasions, we are able to replace the deficits of specific hormones or, in other cases, to decrease the excess of other hormones.

I had the opportunity, early in my career, upon my return at Laval University, to discover that the administration of a superactive hormone, namely an analogue of gonadotropin-releasing hormone (GnRH), the brain hormone that controls both male and female gonads, had an important but unpredictable effect in men. We then found in 1980 that the administration of a superactive GnRH led to a complete blockade of male hormone formation by the testicles in men. This chemical castration could then be easily applied to patients suffering from prostate cancer. This discovery very rapidly replaced surgical castration and high doses of estrogens which had been the standard method of castration for the treatment of prostate cancer worldwide for more than 40 years.
I then had another and probably more important chance by discovering that male hormones are not made exclusively by the testicles in men, as previously believed. In fact, an almost equal amount of male hormones are made in peripheral tissues, including the

prostate from an inactive precursor, namely dehydroepiandrosterone (DHEA) secreted by the adrenal glands. With this knowledge, it became clear that the hormonal treatment of prostate cancer needed to change from an approach limited to castration to a blockade of the male hormones originating from both the testicles and those made locally in the prostate from the inactive precursor DHEA secreted by the adrenal glands. Since the adrenal glands cannot be removed without serious medical consequences, I decided to administer a blocker of the action of these male hormones, made locally in the prostate in order to prevent their action. The objective was to achieve the same effect with a drug as the one which could have been achieved by removal of the adrenal glands by surgery.

Based upon our discovery that 40 % to 50 % of male hormones remain in the prostate cancer tissue after surgical or medical castration, we have thus added an antiandrogen or blocker of the action of these male hormones which, otherwise, continued to stimulate prostate cancer after castration. We called the combination of castration with an antiandrogen combined androgen blockade. While combined androgen blockade is still the best and even the only treatment effective against metastatic disease, it is of major importance to indicate that the same combined androgen blockade can cure prostate cancer in the large proportion of cases when it is applied early when the cancer is localized inside the prostate or in close proximity to the prostate. This means that the cancer must be diagnosed early enough by screening in order to be treated before it spreads to the bone where cure is not possible.

A major advantage of the King Faisal International Prize in medicine is the opportunity to make this medical treatment better known to the general population, first in Saudi Arabia where I came a few years ago to give lectures on combined androgen blockade and also to the whole world in order to permit all men to benefit from treatments which have minimal side-effects and can save the lives of most patients diagnosed sufficiently early with prostate cancer. In fact, with early diagnosis which can be easily achieved by screening, the treatments currently available, including surgery, radiotherapy and combined androgen blockade can practically eliminate death from prostate cancer.

I would like to thank the Custodian of the Two Holy Mosques, King Abd Allah Ibn Abdul Aziz Al-Saud, the King Faisal Foundation and the King Faisal International Prize for such a sophisticated kindness and generosity. This Prize will be a stimulus to further develop even more efficient therapies for prostate cancer and also for breast cancer, a cancer somewhat analogous to prostate cancer in terms of response to hormones. The development of new drugs for these two cancers is my current priority.