



IMMUNOCELLULAR THERAPEUTICS, LTD (OTCBB: IMUC)

- Phase I trial of ICT-107 yields tantalizing efficacy data against glioblastoma and with no safety issues.
- Roche licenses ICT-69 antibody therapy for multiple myeloma and ovarian cancer; more deals in the making.
- Therapies advance in the R&D pipeline – Company is preparing for new clinical trials.
- We reiterate our BUY recommendation and maintain our target price of \$3.25 per share.

ImmunoCellular Therapeutics, Ltd. (OTCBB: IMUC) is a development stage company dedicated to immunological therapies targeting cancer stem cells. Its two technology platforms have created “active” and “passive” immunotherapies against a wide range of cancers. Two “active” therapies are under development. ICT-107 uses autologous tumor-associated antigens to create a dendritic-cell inoculant for patients with glioblastoma. The other candidate is the ICT-121 vaccine, which uses a validated cancer stem cell molecule, CD133, to arm a patient’s immune system. Preclinical research has set a firm basis for ICT-121’s clinical development, initially targeting glioblastoma but with multiple indications possible.

The Company’s “passive” immunotherapy program, based on DIAAD technology, has generated monoclonal antibodies against specific cancer cell antigens. One project has created therapeutic candidates for pancreatic and small cell lung cancers. The Company recently received patent protection on these

Share Price (11/6/09)	\$1.05
52-Week Price Low / High	\$0.15-\$1.38
Mkt. Capitalization (issued)	\$15.8 M
Shares Outstanding (issued)	14.7 M
12-month Target Price	\$3.25
Website	www.imuc.com



antibodies, ICT-37 and ICT-109. Another project has yielded antibodies that recognize multiple myeloma and ovarian cancer. This antibody, ICT-169, was recently licensed to Roche for diagnostic and therapeutic uses. The unique capability of antibody technology to serve both functions supports the growing acceptance of personalized medicine.

CHRYSTYNA BEDRIJ 212-509-9500 CBEDRIJ@GRIFFINSECURITIES.COM	KEITH A. MARKEY, PH.D. 212-514-7914 KMARKEY@GRIFFINSECURITIES.COM	MARK MERRILL 646-442-1441 MMERRILL@GRIFFINSECURITIES.COM
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ICT-107 PERFORMS WELL IN PHASE I CLINICAL TRIAL

Investigators from the Cedars-Sinai Medical Center reported data last week on ImmunoCellular's dendritic cell therapy for glioblastoma at the Congress of Neurological Surgeons Annual Meeting.¹ This autologous dendritic-cell based cancer vaccine extended the lives of glioblastoma multiforme patients well beyond the historical life expectancy.

Preparation of the vaccine: The therapeutic vaccine was prepared by isolating tumor-associated antigens from each patient and using these peptides to pulse autologous monocytes cultured with the cytokines interleukin-4 and granulocyte macrophage-colony stimulating factor, or GM-CSF. The mature antigen-presenting dendritic cells were then administered to the patient as described below.

Patients and therapeutic regimen: Overall, 19 patients were admitted to the study, 16 of whom were newly diagnosed and three had recurrent disease. All patients underwent surgery to debulk the tumor. At that point, the two groups' therapies diverged, with the newly diagnosed patients receiving radiation and temozolomide prior to three intradermal doses of ICT-107 spaced two weeks apart. This was followed by temozolomide (sold as Temodar[®] by Schering Corporation) in monthly cycles. (Temozolomide was until recently the only chemotherapy approved for glioblastoma.) Patients with recurrent disease were treated similarly, except that radiation therapy was not included.

Safety Results: Data on 19 patients, who received 57 courses of ICT-107, demonstrated no grade 3/4 adverse events. The only adverse events encountered were mild (grade 1) fatigue, skin rash, and pruritis.

Results: Newly diagnosed patients had a median progression-free survival time, which is defined as the time between surgical tumor resection and tumor recurrence, of 19 months. This statistic compares quite favorably with the historical median of 6.9 months. In addition, overall survival was extended, though a final tabulation could not be provided, as 13 of the 16 newly diagnosed patients were still alive with a median survival of 20 months and three had already passed the two-year milestone without disease progression. The benefit of adding ICT-107 to the standard of care is apparent in a comparison of the graphs in Figures 1 and 2.^{2,1}

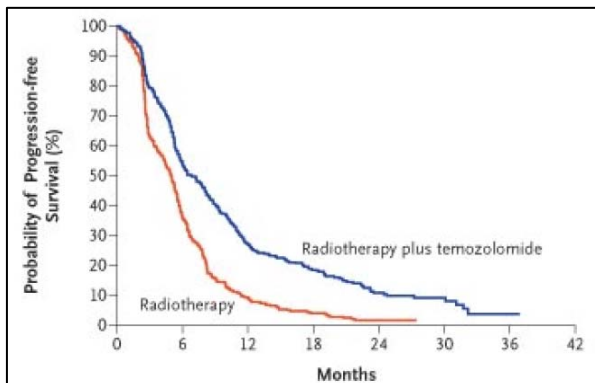


Figure 1. A comparison of the probabilities of progression-free survival of glioblastoma patients receiving radiotherapy alone or in combination with temozolomide.

Source: Stupp, R, et al.²

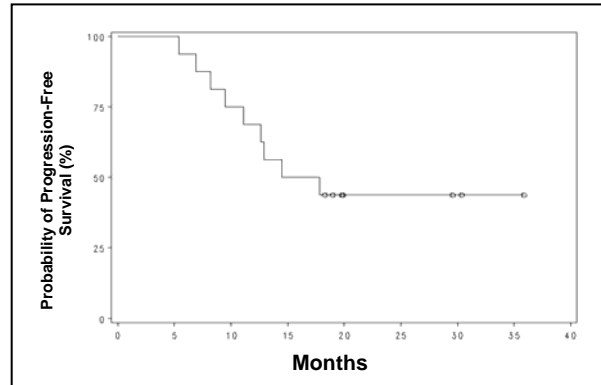


Figure 2. The probability of progression-free survival of glioblastoma patients treated with radiotherapy, temozolomide, and ICT-107.

Source: Yu, J. et al.¹

¹ Yu, J, et al. A phase I trial of tumor associated antigen-pulsed dendritic cell immunotherapy for patients with glioblastoma. Presented at the Congress of Neurological Surgeons Annual Meeting on October 26, 2009.

² Stupp, R, et al. Radiotherapy plus concomitant and adjuvant temozolomide for glioblastoma. N Engl J Med 2005; 352(10): 987.

Three patients with recurrent disease were also admitted to the study, and their median progression free survival was 99.6 weeks (range: 45.4 – 115.3) and their median overall survival was 133.7 weeks (range: 70.1 – 195.6).

The trial also examined each patient's immune response to ICT-107 and found that 35% of the patients were responders to the vaccine, as defined by a 1.5-fold or higher increase in γ -interferon production after vaccination. The response rate in this trial was lower than that observed in prior studies, but the current results did affirm a correlation between immune response and progression-free survival that was previously identified.³

PARTNERING UPDATE

ICT-69 Antibody: ImmunoCellular licensed the exclusive rights to ICT-69 antibody to Roche in exchange for milestones of as much as \$32 million and mid-single-digit royalties on product sales. This antibody is highly specific for multiple myeloma and ovarian cancer, and may be used for both diagnostic and therapeutic purposes.

ICT-107 Cancer Vaccine: The Company intends to seek a partner to complete the development of ICT-107 and commercialize it. We believe the latest data will attract considerable attention within the pharmaceutical/biotechnology industry, as glioblastoma is the most common and deadliest brain cancer and ImmunoCellular's vaccine appears to offer a distinct survival benefit beyond that achieved with today's standard of care. A partnering agreement is therefore likely within the next 12 months. In preparing our revised financial valuation model, we've assumed that ImmunoCellular signs a deal similar to one between Celldex and Pfizer for CDX-110, a glioblastoma immunotherapy that's akin to ICT-107, but with an inferior therapeutic profile (progression-free survival: 14.2 months, versus 19 months for ICT-107). We've assumed that the Company receives an upfront fee of \$10 million, milestones totaling \$50 million, and royalties of 9% of its partner's sales.

New Vaccine Candidates: ImmunoCellular is actively seeking the right to develop additional cancer vaccines based on proteins discovered by others, notably university scientists. Some progress has been made in identifying a new target molecule(s), and we believe news regarding a licensing agreement will be forthcoming within the next few months.

THERAPIES IN R&D PIPELINE APPROACHING CLINICAL TRIALS

ICT-121 Cancer Vaccine: A Phase I clinical trial is scheduled for early next year to test this vaccine, pending FDA approval. The vaccine is based on a membrane protein, designated CD 133, that is overexpressed by numerous tumors, including colon, breast, liver, and prostate cancers, as well as multiple myeloma, glioblastoma, and melanoma. The Phase I trial will focus on glioblastoma, based on preclinical data showing that ICT-121 targets cancer stem cells of that malignancy. In preparation, ImmunoCellular has engaged a manufacturer, Formatech, to produce sufficient quantities of CD 133 to conduct the Phase I trial.

ICT-37 & ICT-109 Antibodies: These antibodies have been created against epitopes of CECAM 5 alone and CECAM 5 and CECAM 6 respectively. The glycosylated molecules are found attached to the surfaces of a wide range of malignant cells, which means that the commercial value of these antibodies may well prove to be very large. Accordingly, ImmunoCellular contracted with an antibody-specialist for the production of humanized versions of ICT-37 and ICT-109 in preparation for their clinical evaluation. The Company has expressed its interest in testing ICT-109 against pancreatic cancer, after successfully testing this antibody as a diagnostic agent for both pancreatic and lung cancer using patients' serum samples. Plans are under way to partner the antibody with a diagnostic test manufacturer for an assay to detect these malignancies at an early stage. At this juncture, pancreatic cancer is rarely identified until it

³ Wheeler, C.J, et al. Vaccination elicits correlated immune and clinical responses in glioblastoma multiforme patients. *Cancer Res* 2008; 68(14): 5955.

has reached an advanced stage that typically leads to death within months of diagnosis. Hence, a simple blood test using ImmunoCellular's antibody would constitute an important advance in the field of oncology.

INVESTMENT CONCERNS AND RISKS

For a complete description of risks and uncertainties related to ImmunoCellular Therapeutics' business, see the "Risk Factors" section in ImmunoCellular's SEC filings, which can be accessed directly from the SEC Edgar filings at www.sec.gov. Potential risks include:

- **Stock risk and market risk:** There is a limited trading market for the Company's common stock. There can be no assurance that an active and liquid trading market will develop or, if developed, that it will be sustained, which could limit one's ability to buy or sell the Company's common stock at a desired price. Investors should also consider technical risks common to many small-cap or micro-cap stock investments, such as small float, risk of dilution, dependence upon key personnel, and the strength of competitors that may be larger and better capitalized.
- **Competitive risk:** The pharmaceutical and biotechnology markets are rapidly evolving, and research and development are expected to continue at an accelerated pace. Other companies are also actively engaged in the development of therapies to directly or indirectly treat those disorders being pursued by ImmunoCellular. These companies may have substantially greater research and development capabilities, as well as significantly greater marketing, financial, and human resources than ImmunoCellular.
- **Products still in development phases:** The Company's products are still in the discovery stage. Such products may appear to be promising, but may not reach commercialization for various reasons, including failure to achieve regulatory approvals, safety concerns, and/or the inability to be manufactured at a reasonable cost. And even if its products are commercialized, there can be no assurance that they will be accepted, which may prevent the Company from becoming profitable.
- **Funding requirements:** It is difficult to predict ImmunoCellular's future capital requirements. The Company may need additional financing to continue funding the research and development of its products and to expand its business. There is no guarantee that it can secure the desired future capital or, if sufficient capital is secured, that current shareholders will not suffer significant dilution.
- **Regulatory risk:** There is no guarantee that ImmunoCellular's products will be approved by the U.S. Food and Drug Administration (FDA) or international regulatory bodies for marketing in the U.S. or abroad.
- **Patent risk:** The field of immunotherapies is at an early stage of development, and although ImmunoCellular has licensed and/or filed for numerous patents to secure its right to commercialize this technology and its antibody therapeutic agents, not all of these patents have been challenged, and therefore some may not protect the Company's rights adequately in a competitive marketplace.

FINANCIAL FORECASTS & VALUATION

We have updated the financial model published in our Initiation Report on ImmunoCellular, dated April 27, 2009, for the recent advances in partnering ICT-69 and completion of the Phase I trial of ICT-107. Rather than repeat all of our revenue assumptions in this report, we have included only those that were changed. We recommend that this report be read in conjunction with our Initiation Report for a more thorough understanding of the Company and our analysis.

REVENUE SOURCES

ICT-107: Glioblastoma			
Year penetration starts	2014	Incidence	39500
Starting penetration rate	7%	Percent addressable	100%
Years between penetration start and peak	6	Market growth rate	1%
Peak penetration	25%	Price per patient	\$30,000
Duration of peak penetration in years	4	Treatment price growth	0%
Retention rate in decline years	90%	Royalty rate	9%
Stage of development	Phase II	Probability of commercialization	25%

Assumptions regarding ICT-107:

- ImmunoCellular outlicenses ICT-107 in 2010 in exchange for upfront and milestone payments totaling \$60 million and a royalty of 9% of its partner's sales.
- The vaccine is approved after a Phase II/III trial that confirms the efficacy results achieved in the recent Phase I trial, and it is launched in 2014.
- The patient population consists of the 39,500 newly diagnosed patients annually in developed countries.
- The starting penetration rate is 7%, given the vaccine's good efficacy, but offset by the need to work with autologous tumor-associated antigens. Six years after launch the vaccine is used to treat 25% of the patient population.
- The price of each patient's therapy is \$30,000.
- The probability of commercialization is now 25%, since the vaccine has completed a Phase I study that demonstrated a good safety profile and provided evidence of efficacy.

ICT-69: Multiple myeloma			
Year penetration starts	2017	Incidence	79,825
Starting penetration rate	5%	Percent addressable	50%
Years between penetration start and peak	8	Market growth rate	1%
Peak penetration	16%	Price per patient	\$25,000
Duration of peak penetration in years	5	Treatment price growth	0%
Retention rate in decline years	90%	Royalty rate	6%
Stage of development	Preclinical	Probability of commercialization	7%

ICT-69 Ovarian Cancer			
Year penetration starts	2016	Incidence	103,332
Starting penetration rate	10%	Percent addressable	90%
Years between penetration start and peak	5	Market growth rate	1%
Peak penetration	33%	Price per patient	\$25,000
Duration of peak penetration in years	5	Price growth	0%
Retention rate in decline years	90%	Royalty rate	6%
Stage of development	Preclinical	Probability of commercialization	7%

Assumptions regarding ICT-69:

- Roche has the wherewithal to develop this antibody as a therapy for both multiple myeloma and ovarian cancer.
- The patient populations consist of newly diagnosed individuals, based on estimates for developed countries by the American Cancer Society. However, not all patients are considered candidates for ICT-69 therapy. The multiple myeloma population is reduced by 50% to reflect the availability of genetic tests to optimize use of other therapies. The addressable ovarian cancer population is 90% of the total to reflect health-related limitations of patients with advanced stages of the disease.
- The starting rate for penetrating the multiple myeloma cancer market is 5%, due to good efficacy and safety profiles of the drug, offset by . Five years after launch ICT-69's acceptance peaks at 33% of the patient population, where it remains for five years until competition rises.
- The starting rate for penetrating the ovarian cancer market is 10%, due to good efficacy and safety profiles of the drug. Five years after launch ICT-69's acceptance peaks at 33% of the patient population, where it remains for five years until competition rises.

INCOME STATEMENT[#] (FISCAL YEAR ENDS DECEMBER 31ST.)

All data in thousands, except per share figures.

	2009	2010	2011	2012	2013
Total revenue	\$ 1,000	\$ 5,000	\$ 12,600	\$ 19,200	\$ 22,800
COGS	-	-	-	-	-
Gross profit	\$ 1,000	\$ 5,000	\$ 12,600	\$ 19,200	\$ 22,800
Operating expenses					
R&D	\$ 1,900	\$ 2,250	\$ 2,500	\$ 4,000	\$ 6,000
Administrative					
General	1,500	1,500	2,000	2,000	2,000
Total expense	3,400	3,750	4,500	6,000	8,000
Operating profit/loss	\$ (2,400)	\$ 1,250	\$ 8,100	\$ 13,200	\$ 14,800
Total non-operating	-	-	-	-	-
Pretax profit/loss	\$ (2,400)	\$ 1,250	\$ 8,100	\$ 13,200	\$ 14,800
Income tax			3,078	5,016	5,624
Net income/loss	\$ (2,400)	\$ 1,250	\$ 5,022	\$ 8,184	\$ 9,176
Earnings (loss) per share	\$ (0.17)	\$ 0.08	\$ 0.33	\$ 0.53	\$ 0.58
Shares outstanding	14000	15000	15250	15500	15750

Assumptions regarding the Income Statement:

- All upfront and milestone payments are recognized over five-year periods.
- Since we've assumed that ImmunoCellular outlicenses its products, we've made no provisions for manufacturing or marketing costs.
- Operating expenses include royalties paid for in-licensed intellectual property at 3% of revenues.
- R&D costs in 2009 approximate \$1.9 million. Thereafter, they rise as ICT-121 enters more advanced clinical trials. By 2014, new product development costs reach 18% of revenues, a level that is maintained thereafter.
- General expenses in 2009 total \$1.5 million. Over time, these expenses increase as the corporate infrastructure expands to support the development of ICT-121 and its commercialization. Thereafter, we've assumed the company devotes 7% of its revenue to these operating items.
- The corporate effective tax rate is 38%, and no provision is made for net operating loss carryforwards.
- We've assumed that exercising of options gradually increases the number of shares outstanding.

BALANCE SHEET# (FISCAL YEAR ENDS DECEMBER 31ST.)

All data in thousands

ASSETS	6/30/2009	12/31/2008
Current Assets		
Cash & equivalents	\$ 2,248	\$ 3,085
Other	225	28
Total Current Assets	<u>\$ 2,473</u>	<u>\$ 3,113</u>
Property & equipment	\$ 6	\$ 8
Other	8	7
Total Assets	<u><u>\$ 2,487</u></u>	<u><u>\$ 3,128</u></u>
LIABILITIES		
Current Liabilities		
Accounts payable	\$ 224	\$ 133
Debt due	-	-
Other	127	55
Total Current Liabilities	<u>\$ 351</u>	<u>\$ 188</u>
Long-term debt	\$ -	\$ -
Shareholders Equity		
Common Stock, par value	\$ 15	\$ 13
Additional Paid-In Capital	15,602	15,012
Accumulated Deficit	(13,481)	(12,085)
Treasury Stock	-	-
Total Shareholders Equity	<u>\$ 2,136</u>	<u>\$ 2,940</u>
Total liabilities & equity	<u><u>\$ 2,487</u></u>	<u><u>\$ 3,128</u></u>

DISCOUNTED CASH FLOW MODEL[#] (FISCAL YEAR ENDS DECEMBER 31ST.)

All data in thousands, except per share figures.

	2009	2010	2011	2012	2013
Revenue	\$ 1,000	\$ 5,000	\$ 12,600	\$ 19,200	\$ 22,800
Operating income	(2,400)	1,250	8,100	13,200	14,800
Net income	(2,400)	1,250	5,022	8,184	9,176
Depreciation/amortization	2	3	3	10	10
Stock-based compensation	500	500	500	600	600
Tax loss carryforwards	-	-	-	-	-
Capital expenditures	-	(1)	(2)	(25)	(25)
Total cash flow adjustments	502	502	501	585	585
Free cash flow	\$ (1,898)	\$ 1,752	\$ 5,523	\$ 8,769	\$ 9,761
Risk-adjusted free cash flow	\$ (1,898)	\$ 140	\$ 492	\$ 803	\$ 881

Discount Rate	Discounted Cash Flows (2008 - 2024)	PV of Terminal Value at a Perpetual growth rate of rFCF			Enterprise Value		
		2.0%	3.0%	4.0%	2.0%	3.0%	4.0%
7.5%	\$37,972.98	\$ 89,782	\$ 110,809	\$ 143,852	\$127,755	\$148,782	\$181,825
10.0%	\$28,733.67	\$ 43,722	\$ 50,458	\$ 59,439	\$72,455	\$79,191	\$88,172
12.5%	\$21,926.47	\$ 23,779	\$ 26,540	\$ 29,950	\$45,706	\$48,467	\$51,877
15.0%	\$16,857.79	\$ 13,812	\$ 15,110	\$ 16,644	\$30,670	\$31,968	\$33,502
17.5%	\$13,045.18	\$ 8,390	\$ 9,057	\$ 9,822	\$21,435	\$22,102	\$22,867

Discount Rate	Net Debt	Total Equity Value			Value per Diluted Share		
		2.0%	3.0%	4.0%	2.0%	3.0%	4.0%
7.5%	\$ (2,248)	\$130,003	\$151,030	\$184,073	\$ 8.25	\$ 9.59	\$ 11.69
10.0%	(2,248)	\$74,703	\$81,439	\$90,420	\$ 4.74	\$ 5.17	\$ 5.74
12.5%	(2,248)	\$47,954	\$50,715	\$54,125	\$ 3.04	\$ 3.22	\$ 3.44
15.0%	(2,248)	\$32,918	\$34,216	\$35,750	\$ 2.09	\$ 2.17	\$ 2.27
17.5%	(2,248)	\$23,683	\$24,350	\$25,115	\$ 1.50	\$ 1.55	\$ 1.59

Discount Rate	Terminal Value as % Enterprise Value			Implied EBITDA Multiple		
	2.0%	3.0%	4.0%	2.0%	3.0%	4.0%
7.5%	70.3%	74.5%	79.1%	11.63	14.35	18.63
10.0%	60.3%	63.7%	67.4%	7.99	9.22	10.87
12.5%	52.0%	54.8%	57.7%	6.09	6.80	7.67
15.0%	45.0%	47.3%	49.7%	4.92	5.38	5.93
17.5%	39.1%	41.0%	43.0%	4.13	4.45	4.83

Assumptions related to the Discounted Cash Flow Analysis:

- The DCF model projects cash flow through 2024, discounted back at multiple annual rates (7.5%, 10.0%, 12.5%, 15.0%, and 17.5%) to demonstrate the potential variability related to this assumption. It also includes three perpetual growth rates (2%, 3%, and 4%) to show the impact on the present value of the company's terminal value. The rates used in calculating the per-share value for ImmunoCellular are a 12.5% annual discount rate and a perpetual growth rate of 3%. The number of fully-diluted shares estimated to be outstanding in 2013, 15.75 million, is used in the per-share calculation.
- The cash flows are risk adjusted, based on the proportional gross profit contribution by each therapy on an annual basis and the probability of that therapy being commercialized. For any years in which we are projecting losses, the probability is conservatively set at 100%.

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PRICE CHART



Source: BigCharts.com

4/27/2009 – Initiating Coverage: share price: \$0.37; rating: BUY; 12-month price target: \$2.50; **11/09/2009** – Update Report: share price: \$1.05; 12-month price target: \$3.25.

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